



# GUIDELINE EDUCATION AND EXAMINATION REGULATIONS

## 2024-2025

For the Master's programmes:  
Civil Engineering & Management (M-CEM)  
Construction Management & Engineering (M-CME)

UNIVERSITY OF TWENTE.

## PREFACE

The rights and obligations of the students on the one hand and the University of Twente on the other hand are laid down in the Student Charter, which contains two parts:

- The institutional part of the Student Sections, which contains the rights and obligations that apply to all UT students. The institutional section can be found at: [www.utwente.nl/en/ces/sacc/regulations/charter](http://www.utwente.nl/en/ces/sacc/regulations/charter).
- The programme-specific part of the Student Charter, which is called the Education and Examination Regulations (EER) and provides a broad outline of the teaching programme and examination for each degree programme.

This document is the Education and Examination Regulations. In accordance with Section 7.13, Paragraph 1, of the Dutch Higher Education and Research Act (Wet op het hoger onderwijs en wetenschappelijk onderzoek, hereafter: WHW), the EER must contain sufficient and clear information about the degree programme or group of programmes to which they apply. Section 7.13, Paragraph 2, of the WHW lists those issues that must, as a minimum, be stipulated in the EER with respect to procedures, rights and responsibilities relating to the teaching and examinations that are part of each degree programme or group of programmes. The WHW also includes a number of separate obligations relating to the inclusion of rules within the EER.

An ET guideline was provided to promote uniformity in the structure and formulation of elements that apply to all ET degree programmes.

Please note rights can be derived from the EER by both the Engineering Technology Faculty (ET) and students enrolled in its Master's programme. This is not the case concerning all other written and electronic publications.

When reference is made to an Article, Section or Rule in this regulation, this document is meant, unless otherwise specified. When reference is made to the law, the Higher Education and Research Act (WHW) is meant, unless otherwise specified.

The Dean of the Faculty Engineering Technology, in view of the articles 9.5, 9.15, first SECTION (a), 7.13 first and second SECTIONS, 9.38 (b), and 9.18, first SECTION (a), and 7.59 of the Higher Education and Research Act (WHW), and in due consideration of the recommendations of the Programme Committee, as well as the approval by, or advice of, the Faculty Council, hereby adopts the ET Education and Examination Regulations.

Prof.dr.ir. H.F.J.M. Koopman  
Dean of the Faculty of Engineering Technology

## TABLE OF CONTENTS

|  |    |
|--|----|
| Preface .....  | 2  |
| Section 1. General provisions .....                                | 5  |
| Article 1.1 Applicability of these regulations .....               | 5  |
| Article 1.2 Definitions.....                                       | 5  |
| Article 1.3 Language of tuition .....                              | 7  |
| Article 1.4 Safety .....   | 7  |
| Article 1.5 4TU.....   | 7  |
| Section 2. Application and enrolment .....                         | 8  |
| Article 2.1 Conditions.....  | 8  |
| Article 2.2 Pre-Master’s programme .....                           | 8  |
| Article 2.3 Following Master’s courses by non-Master students..... | 9  |
| Section 3. Contents of the programme .....                         | 10 |
| article 3.1 Aim of the programme.....                              | 10 |
| Article 3.2 Programme intended learning outcomes.....              | 10 |
| Article 3.3 Specialisations .....                                  | 13 |
| Article 3.4 Individualised programme .....                         | 13 |
| Article 3.5 Study abroad.....                                      | 13 |
| Section 4. Structure of the programme.....                         | 14 |
| Article 4.1 Structure in general .....                             | 14 |
| Article 4.2 Composition of the study programme .....               | 14 |
| Article 4.3 Following two UT Master programmes simultaneously..... | 14 |
| Article 4.4 Including international courses in the programme ..... | 14 |
| Section 5. Teaching and assessment .....                           | 15 |
| Article 5.1 Assessment in general .....                            | 15 |
| Article 5.2 Exemptions .....                                       | 15 |
| Article 5.3 Online assessment.....                                 | 15 |
| Article 5.4 Oral Examinations.....                                 | 15 |
| Article 5.5 Assessment plan .....                                  | 16 |
| Article 5.6 Registration.....                                      | 16 |
| Article 5.7 Results.....   | 16 |
| Article 5.8 Assessment deadline, examination and test date .....   | 17 |
| Article 5.9 Period of validity of results.....                     | 17 |
| Article 5.10 Right of discussion and inspection.....               | 17 |
| Article 5.11 Retention period for tests .....                      | 18 |
| Article 5.12 Examination Board .....                               | 18 |
| Article 5.13 Quality assurance .....                               | 18 |
| Section 6. Final examination and degree .....                      | 19 |
| Article 6.1 Final examination .....                                | 19 |
| Article 6.1.1 General.....   | 19 |
| Article 6.1.2 Requirements.....                                    | 19 |
| Article 6.1.3 Duration .....                                       | 20 |
| Article 6.1.4 Graduation committee.....                            | 20 |
| Article 6.2 Diploma.....   | 20 |
| Article 6.3 With distinction / Cum Laude .....                     | 21 |

|  |    |
|--|----|
| Section 7. Student guidance and facilities .....                         | 22 |
| Article 7.1 Student guidance .....                                       | 22 |
| Article 7.2 Special Facilities .....                                     | 22 |
| article 7.3 Studying with a fuctional impairment.....                    | 22 |
| Article 7.4 Request for facilities .....                                 | 22 |
| Section 8. Final provisions .....  | 24 |
| Article 8.1 Conflicts of the regulations.....                            | 24 |
| Article 8.2 Administrative errors.....                                   | 24 |
| Article 8.3 Amendments to the regulations.....                           | 24 |
| Article 8.4 Transitional arrangements.....                               | 24 |
| Article 8.5 Assessment of the education and examination regulations..... | 24 |
| Article 8.6 Appeal and objections .....                                  | 24 |
| Article 8.7 Hardship clause.....   | 25 |
| Article 8.8 Publication .....  | 25 |
| Article 8.9 Entry into force .....                                       | 25 |
| <br>   |    |
| <b>Appendices</b>  |    |
| Appendix A. Curriculum information.....                                  | 26 |
| Appendix B. Transition Regulations.....                                  | 30 |
| Appendix C. Practical Information.....                                   | 31 |
| appendix D. procedure for the final master examination .....             | 33 |

## SECTION 1. GENERAL PROVISIONS

### ARTICLE 1.1 APPLICABILITY OF THESE REGULATIONS

1. This general section of the education and examination regulations applies to all students enrolled in the master's programmes of the Faculty of Engineering Technology: Mechanical Engineering (M-ME), Sustainable Energy Technology (M-SET), Civil Engineering & Management (M-CEM), Construction Management & Engineering (M-CME), and Industrial Design Engineering (M-IDE).
2. Students attending courses that are not part of the CEM/CME programme are subject to the rules laid down in the appropriate documents, such as the assessment rules laid down in the assessment schedule of the relevant course, or the rules laid down in the EER of the coordinating degree programme. The decision on special facilities in accordance with Article 7.2 may only be taken by the Examination Board of the programme for which the student is enrolled.
3. The institute section of the [student charter](#) includes a definition of what the University of Twente considers to be academic misconduct (fraud). The rules and regulations of the Examination Board for the master's programme in question include additional rules about academic misconduct (fraud), such as which measures the Examination Board may take if it establishes misconduct (fraud).
4. The rules and regulations of the Examination Board of the master's programme in question include provisions about the rules of order during tests and rules in case of emergencies.
5. Requests for exemptions in respect of provisions laid down in the education and examination regulations should be submitted to the Examination Board or mandated track/specialisation coordinator of the student's own master's programme, as laid down in the relevant articles of these Regulations.

### ARTICLE 1.2 DEFINITIONS

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

|                             |   |
|-----------------------------|---|
| <b>Academic year:</b>       | The period beginning on 1 September and ending on 31 August of the following year.  |
| <b>Admission Committee:</b> | The Admissions Committee is mandated by the Faculty Board to decide on the admission of applicants to the Master's programme (Article 7.30 WHW).  |
| <b>Assessment plan:</b>     | A plan indicating how the testing of a course is organised. At first, it states the grading of the course, and secondly, the conditions for passing the course (including possible compensation rules within the course).                             |
| <b>Assignment:</b>          | The execution of a design or research assignment.   |
| <b>BOZ:</b>                 | Office of Educational Affairs within the Centre for Educational Support (CES).  |
| <b>Canvas:</b>              | University of Twente's digital learning environment.  |
| <b>CEM:</b>                 | The Master's programme Civil Engineering and Management   |
| <b>CME:</b>                 | The Master's programme Construction Management & Engineering  |
| <b>Course:</b>              | A programme component as defined in Article 7.3, paragraph 2 and 3 WHW. Each course is concluded with an examination. An examination can consist of multiple tests.   |
| <b>Credit/ECTS:</b>         | 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 WHW).  |
| <b>Curriculum:</b>          | The aggregate of required and elective courses constituting a degree programme as laid down in the programme-specific part.   |
| <b>CPO:</b>                 | A committee formed by the institutional board that issues advice to the programme board in individual cases concerning the validity, term and seriousness of the personal circumstances of the student involved                                       |
| <b>Degree programme:</b>    | Master's degree programme as referred to in Article 1.1.  |
| <b>Essay:</b>               | Written report about a theoretical or practical project/assignment  |
| <b>Examination:</b>         | An evaluation, performed to conclude a course, of the student's knowledge, understanding and skills as well as an assessment of the outcomes of that evaluation (Article 7.10 WHW); an examination may consist of a number of tests.                  |
| <b>Examination Board:</b>   | 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 (Article 7.12 WHW). |

|  |  |
|--|--|
| <b>Examiner:</b>   | The individual appointed by the Examination Board to administer examinations and tests and to determine the results, in accordance with Article 7.12c WHW.   |
| <b>Exemption:</b>  | The decision of the Examination Board that the student has knowledge and skills which are comparable in terms of content, scope and level with one or more courses or components of courses. An exemption is granted based on acquired competencies, i.e. previously passed examinations in higher education or in view of knowledge and skills attained outside higher education. |
| <b>Faculty Board:</b>  | Head of the faculty (Article 9.12, paragraph 2 WHW).   |
| <b>Final examination:</b>  | A degree programme is concluded with a final examination. If the courses in the degree programme have been completed successfully, then the final examination will be deemed to have been completed (Article 7.10 WHW).  |
| <b>FOBOS:</b>  | Financial Support for Special Circumstances of Students.   |
| <b>HBO:</b>  | Dutch University of Applied Sciences.  |
| <b>Higher Education and Research Act (abbreviated to 'WHW'):</b> | The Higher Education and Research Act, Bulletin of Acts and Decrees 1992, 593, and its subsequent amendments.  |
| <b>Institution:</b>  | University of Twente (Universiteit Twente).  |
| <b>Institutional administration:</b>                             | The Executive Board of the University of Twente (Article 1.1 WHW).   |
| <b>Language of tuition:</b>                                      | The official language of tuition is the language in which education is given, in which teaching material is provided and in which tests and examinations are held.   |
| <b>Learning outcomes:</b>  | The qualities regarding the knowledge, insight and skills a student must have acquired upon completion of the programme.   |
| <b>Lecture:</b>  | A plenary (on Campus or online) gathering for students, intended for the presentation of information.  |
| <b>Literature study:</b>   | The undertaking of a literature research into specified scientific phenomena.  |
| <b>Osiris:</b>   | System designated by the institutional administration for registration and for providing information on all relevant data related to the students and the degree programme, as referred to in the WHW.   |
| <b>Partner institution:</b>                                      | An institution with which the university has a structural relationship for collaboration, in which the programme is active. For example the 4TU federation and the ECIU -network ( <a href="http://www.eciu.org/">http://www.eciu.org/</a> )   |
| <b>Practical exercise:</b>                                       | a practical assignment (online or on Campus). This refers to participation in an educational activity designed to acquire certain skills, such as the completion of an assignment or a technological design, the execution of tests and experiments, computer work and participation in fieldwork or an excursion.   |
| <b>Pre-Master's programme:</b>                                   | The pre-Master's programme is a transfer and bridging programme for Universities of Applied Sciences (HBO) or University Bachelor programme students who wish to obtain a university master's degree, but who cannot be admitted directly (see Article 2.2).   |
| <b>Programme Committee (OLC):</b>                                | Committee referred to in Article 9.18 WHW.   |
| <b>Programme Director:</b>                                       | The person appointed by the Faculty Board to administer the programme (Article 9.17 WHW).  |
| <b>Project:</b>  | Working as a team of students to carry out a design or research assignment, usually based on a real-life scenario.   |
| <b>Rules and regulations Examination Board:</b>                  | Rules and regulations as defined by and of the Examination Board   |
| <b>Seminar:</b>  | A meeting for a part of the population to offer students the opportunity to work through the learning materials (also supervised self-study).  |
| <b>Student:</b>  | Anyone enrolled in a programme in accordance with Article 7.34 and 7.37 WHW.   |

|                           |   |
|---------------------------|---|
| <b>Study advisor:</b>     | Person appointed by the Faculty Board who acts as contact between the student and the university, and in this role represents the interests of the student, as well as fulfilling an advisory role.   |
| <b>Study tour:</b>        | A trip made for the purpose of study and/or carrying out research.  |
| <b>Study load:</b>        | The time an average student needs to learn the course material. The study load comprises project work, independent study, lectures and writing assignments, for example. The study load is expressed in ECTS credits according to the European Credit Transfer System.  |
| <b>Test:</b>              | An evaluation of the student's knowledge, understanding and skills as well as an assessment of the outcomes of that evaluation. A test is part of an examination. If the examination for a course consists of a single test then the result of that test will count as the result of the examination. A test can consist of subtests. |
| <b>Teaching period:</b>   | The period in which a course is offered. This period starts in the first week in which an educational activity takes place for the course concerned and ends in the final week in which an educational activity takes place and/or a test is administered for the course concerned.   |
| <b>TimeEdit:</b>          | The application used at the University of Twente to view and download the timetable of the study programme.   |
| <b>Track coordinator:</b> | Member of the scientific staff responsible for providing advice on, and establishing the master's programme, including any deficiencies.  |
| <b>Tutorial:</b>          | a (online or on Campus) gathering for a (sub) group of the population in order to allow students to process the subject matter (also known as guided independent learning).   |
| <b>UT:</b>                | University of Twente.   |
| <b>Working day:</b>       | Any day from Monday to Friday with the exception of official holidays and the prearranged compulsory holidays ('brugdagen') on which the staff are free.  |

The definition of all other terms used in these Regulations is in accordance with the definition accorded by the main text of this document, the student charter or the WHW.

### ARTICLE 1.3 LANGUAGE OF TUITION

1. The language of the programme, including communication, instruction and examination is English.
2. The choice of the official language for an educational programme or components of an educational programme lies with the Programme Director, subject to the right to consent of the Programme Committee.
3. If programme components deviate from the language of tuition, then this is to take place in accordance with the Code of Conduct for Languages of the University of Twente and Article 7.2 WHW.
4. The MSc thesis is written in English. In consultation with the supervisors or at the request of the external organisation, 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.

### ARTICLE 1.4 SAFETY

Working in a laboratory or workshop is subject to certain safety requirements. Students are obligated to inform themselves of these rules and comply with them. To be allowed to work in a laboratory or workshop, the student must be registered as a student at the UT.

### ARTICLE 1.5 4TU

Within the 4TU framework the Universities of Twente, Delft and Eindhoven collaborate with the CME programmes, details are included in Appendix C. The rules and regulations of the main registration are applicable.

## SECTION 2. APPLICATION AND ENROLMENT

### ARTICLE 2.1 CONDITIONS

1. 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 WHW, Article 7.30b.
2. Admission to a Master's can be achieved in several ways:
  - a. Graduates from the three Dutch Universities of Technology holding a university Bachelor's degree in Civil Engineering are admitted unconditionally.
  - b. Those holding a university Bachelor's degree in an adjoining subject or programme can be admitted on the condition that a specific supplementation of the Bachelor's programme is undertaken and that a specific graduation specialisation is chosen. Admission from other University of Technology programmes is determined in the admissions matrix: [www.utwente.nl/en/education/master/admission-requirements/dutch-university/](http://www.utwente.nl/en/education/master/admission-requirements/dutch-university/)
  - c. Those holding a university Bachelor's degree in Civil Engineering programme (or adjacent discipline) from a foreign university can be admitted if:
    - i. the (level of the) Bachelor of Science degree from a university abroad is equivalent to the Dutch University Bachelor's degree
    - ii. the student has a CGPA of at least 75% of the maximum score, or the country's equivalent; and
    - iii. the additional requirements (including the language requirements) are satisfied.
    - iv. the application fee has been fulfilled
  - d. Those who have successfully completed a pre-Master's programme are admitted (see Article 2.2 and article 7.30e WHW)
3. Students from abroad must show they have sufficient command of the English language according to the requirements specified on the website [www.utwente.nl/en/education/master/admission-requirements/language/](http://www.utwente.nl/en/education/master/admission-requirements/language/).
4. The Faculty Board of Engineering Technology establishes an admission committee for each master programme, for the purpose of assessing the candidate's suitability for admission to the programme on the basis of the requirements stipulated in Article 2.1.1 - 2.1.3. During the assessment of the application for admission to the master's programme, the Admission Committee can demand that certain subjects must be passed before the proof of admission to the master's programme can be issued.

### ARTICLE 2.2 PRE-MASTER'S PROGRAMME

1. Students with a Bachelor's degree from a Dutch University of Applied Sciences (HBO) in Civil Engineering or in an adjacent subject, as well as students with a Dutch university's Bachelor's degree in adjacent subjects that does not give direct admission to the Master can be admitted to the pre-Master's programme. Admission is at the discretion of the Admissions Committee.
2. The pre-master's programme for students with a Bachelor's degree from a Dutch University of Applied Sciences consists of the following courses:

| Course Code | Course name  | ECTS |
|-------------|--|------|
| 202001172   | Calculus A   | 4    |
| 202000237   | Academic Research Skills                                   | 7.5  |
| 202000241   | Design Project Urban Development                           | 6    |
| 202400375   | Introduction to Programming in Engineering for Pre-Masters | 2    |
| 202001174   | Calculus B   | 3    |
| 202001177   | Probability Theory & Statistics                            | 3    |
| 202000049   | Fluid Mechanics 1  | 2    |
| 202000051   | Water  | 2.5  |
|             | Total  | 30   |

For admission to the MSc programme, the student should pass for all courses (grade  $\geq 5.5$ ).

3. Students with a university education and a deficiency of no more than 15 ECTS can compensate their deficiencies in the first quartile of the Academic Year. Students who start in February can compensate their deficiencies in the third quartile of the Academic Year. After completion, the student can be admitted into the master's programme. Students with a university education and a deficiency of more than 15 ECTS can only be admitted into the programme upon successful completion of a tailor-made Pre-master's programme (15-30 ECTS) composed by the admission committee.



4. Students are allowed no more than two attempts to sit the corresponding examination/test per course of the pre-Master's programme. Students who fail to successfully complete a course within these two attempts will not be admitted to the master's programme.
5. Students who have successfully completed the pre-Master's programme can be admitted to the corresponding master's programme.
6. Students who would like to enter the 4TU CME programme after completion of the Pre-master's programme, must take the entire pre-Master's programme at 1 location. Passing the pre-Master's programme only provides a student a main registration to the 4TU CME location where the student passed the pre-Master.
7. Students who are unable to successfully complete the pre-Master's programme within 12 months are no longer admissible to any of the ET pre-Master's programmes in any following academic years.

### ARTICLE 2.3 FOLLOWING MASTER'S COURSES BY NON-MASTER STUDENTS

A student has the right to follow education and/or take examinations relating to the programme, provided the student has satisfied the legal regulations in force. Results of Master courses obtained during or as part of the bachelor programme are listed on the bachelor's degree. Courses from the master programme may only be listed on the master's degree if the courses were passed during the enrolment in the master programme. This complies with the rules regarding the 'bachelor before master'-rule (Article 7.30b WHW).

## SECTION 3. CONTENTS OF THE PROGRAMME

### ARTICLE 3.1 AIM OF THE PROGRAMME

The MSc programmes Civil Engineering and Management (CEM) and Construction Management and Engineering (CME) focus on both technical and non-technical aspects of planning, design, realisation, and maintenance of civil engineering projects and systems. The programmes address the interests of all stakeholders involved in the broadest sense. For this reason, the research underlying the CEM and CME programmes has generated an interdisciplinary programme focusing on the integration of system knowledge, technology and management in order to produce innovative solutions tailored to societal needs. The design-oriented approach, the strong connection between scientific research and Civil Engineering practice and the emphasis on disciplinary integration, are distinctive features of these MSc programmes.

The programmes aim to provide academic knowledge, understanding, competencies and skills in the domain of Civil Engineering at a level which qualifies the graduate for:

1. Independent professional practice in the field of Civil Engineering;
2. Research in the field of Civil Engineering;
3. Enrolment in PhD programmes in the field of Civil Engineering; and
4. Enrolment in post-MSc design programmes (EngD programmes) in the field of Civil Engineering.

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 such as Business Administration and Public Administration, that graduates are qualified to enter an independent profession at the Master's of Science (MSc) level.

### ARTICLE 3.2 PROGRAMME INTENDED LEARNING OUTCOMES

*Explanatory notes: Article 7.13 WHW*

The qualities relating to the knowledge, understanding and skills that the student should have acquired upon completing the programme are as follows:

*Master of Science graduates of the **CEM programme** are/have*

1. Competent in one or more scientific disciplines
  - a. Graduates have expert knowledge on at least one of the subareas of Civil Engineering and Management mentioned below, are able to apply this knowledge and are able to maintain and expand their expertise in the field of Civil Engineering and Management:
    - I. Construction Management and Engineering;
    - II. Transport Engineering and Management;
    - III. Water Engineering and Management.
    - IV. This includes necessary knowledge of related fields, such as Mathematics, Physics, Business Administration and Public Administration.
  - b. Graduates are 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
  - a. Graduates are able to identify gaps in scientific knowledge within a subfield of Civil Engineering and Management.
  - b. Graduates are able to formulate research problems and are 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.
  - c. Graduates are able to contribute to acquiring scientific knowledge.
  - d. Graduates understand the potential benefits of research and are able to understand and incorporate the results of research into their own work.
  - e. Graduates are able to assess research within a subfield of Civil Engineering and Management on its scientific value.
3. Competent in designing
  - a. Graduates are able to:
    - 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.
  - b. This means that:
    - I. Graduates have creativity and synthetic skills with respect to design projects;
    - II. Graduates are application-oriented towards civil engineering practice when designing;

- III. Graduates are able to find a balance between possible solutions of complex requirements, technical possibilities and genuine interests of the parties involved.
- 4. A scientific approach
  - a. Graduates have the habit of reflecting upon their own work and continuously use relevant information to improve their capabilities.
  - b. Graduates have the attitude to endorse their personal development and enhancing their expertise.
  - c. Graduates are able to judge the value of information for decision making, make effective use of this information for decisions and are able to evaluate these decisions.
  - d. Graduates are able to judge if available tools and techniques are satisfactory for the problem at hand, are able to apply satisfactory tools and techniques and are able to invent their own tools, theories and techniques if these are not available.
  - e. Graduates are able to develop a model to describe/schematise reality, i.e. graduates are able to describe qualitatively civil engineering processes and objects in terms of basic principles and, where necessary and possible, are able to quantify this description in terms of mathematical relationships.
  - f. Graduates know that models only approximate the reality and are able to use them appropriately whenever this is beneficial.
  - g. The scientific attitude of the graduates is not restricted to the boundaries of Civil Engineering and Management, and graduates are able to cross these whenever necessary.
- 5. Basic intellectual skills
  - a. Graduates are able to work independently.
  - b. Graduates are able to work systematically and methodically.
  - c. Graduates are able to analyse complex problems and complex information thoroughly and systematically, are aware of analogies between problems and are able to determine connections between different aspects of the problem or information.
  - d. Graduates are competent in numeracy and are aware of orders of magnitudes.
  - e. Graduates are able to reflect on the complete scope of one of the subfields of Civil Engineering and Management and are able to generate novel ideas in this subfield.
- 6. Competent in cooperating and communicating
  - a. Graduates are able to work effectively in the context of a multidisciplinary environment, are 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.
  - b. Graduates know the importance of oral and written communication, and can make effective use of them, which means that:
    - I. Graduates are capable of collecting and selecting relevant scientific information;
    - II. Graduates are 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. Graduates are competent in scientific reasoning;
    - IV. Graduates adhere to existing academic conventions, such as giving proper credit and referencing.
- 7. Takes account of the temporal and societal context
  - a. Graduates are able to position the (scientific research of) at least one of the subfields in the scientific and societal context.
  - b. Graduates are able to form an opinion or judgement and contribute to discussions about complex matters related to Civil Engineering and Management.
  - c. Graduates know that compromises are unavoidable and are able to deal with them effectively.
  - d. Graduates are aware of the disadvantages for society of certain decisions and know how to communicate them to the relevant parties (stakeholders).

Master of Science graduates of the **CME degree programme** are / have

- 1) Competent in one or more scientific disciplines
  - a. Graduates have knowledge on the following sub-areas of Construction Management and Engineering, are an expert in at least one of them and are able to maintain and expand their expertise in the field of Construction Management and Engineering (for instance, by consulting relevant literature but also look for connections).
    - i. Project and process management in the field of Construction Engineering (i.e. complex constructions, large-scale infrastructure, urban developments);
    - ii. Legal and Governance aspects in the field of Construction Engineering;
    - iii. Markets and organisations in the field of Construction Engineering;
    - iv. Innovations and Integral Design in Construction Engineering.
  - b. Graduates are 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
  - a. Graduates have the competence to acquire new scientific knowledge through research or systematic reflection.
  - b. Graduates understand the potential benefits of research and are able to understand and incorporate the results of research into their own work.
- 3) Competent in designing
  - a. Graduates are able to:
    - i. Contribute to a functional design of complex constructions; or
    - ii. Design management processes in the field of Construction Engineering.
  - b. This means that:
    - i. Graduates have creativity and synthetic skills with respect to design projects;
    - ii. Graduates are application-oriented towards the construction industry when designing constructions or management processes;
    - iii. Graduates are able to translate technological concepts and developments into appropriate process innovations for construction.
  - c. Graduates are 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.
- 4) A scientific approach
  - a. Graduates have the habit of reflecting upon their own work and continuously use relevant information to improve their capabilities.
  - b. Graduates have the attitude to endorse their personal development and enhance their expertise.
  - c. Graduates know that models only approximate reality and are able to develop and use them adequately whenever this is beneficial.
  - d. Graduates make decisions based on calculated risks, costs, time, quality, stakeholders' participation, value creation, legislation and are able to evaluate these decisions.
  - e. The scientific attitude of graduates is not restricted to the boundaries of Construction Management and Engineering, and they are able to cross these where and whenever necessary.
- 5) Basic intellectual skills
  - a. Graduates are able to work independently.
  - b. Graduates are able to work systematically and methodically.
  - c. Graduates are able to reflect on the complete scope of Construction Management and Engineering issues, to critically analyse and to generate novel ideas.
  - d. Graduates are able to invent their own tools, theories and techniques if these are not available.
- 6) Competent in cooperating and communicating
  - a. Graduates are able to work effectively in the context of a multidisciplinary environment, are 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.
  - b. Graduates know the importance of oral and written communication, in particular in English, and can make effective use of these, this means that:
    - i. Graduates are 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;
    - ii. Graduates are competent in reasoning;
    - iii. Graduates adhere to existing academic conventions, such as giving proper credit and referencing.

- 7) Takes account of the temporal and societal context
  - b. Graduates are able to form an opinion or judgement and contribute to discussions about complex matters related to Construction Management and Engineering.
  - c. Graduates know that compromises are unavoidable and are able to effectively deal with these.
  - d. Graduates are aware of the disadvantages for society of certain decisions and can communicate these to the relevant parties (stakeholders). Graduates can take the purpose of the design and its context into consideration.

### ARTICLE 3.3 SPECIALISATIONS

The CEM programme offers four tracks. The tracks are subdivided in profiles. Students specialise in one of the following directions by selecting a profile:

- Construction Management and Engineering including the profiles:
  - Markets & Organization of Construction
  - Digital Technologies in Construction
- Transport Engineering and Management including the profiles:
  - Integrated Urban Transport
  - Transport and Logistics
- Water Engineering and Management including the profiles:
  - Integrated Water Management
  - River and Coastal Engineering
- Integrated Civil Engineering Systems including the profiles:
  - Civil Engineering Structures
  - Sustainability & Resilience

Descriptions of these tracks and profiles can be found on:

[www.utwente.nl/en/education/master/programmes/civil-engineering-management/specialisations/](http://www.utwente.nl/en/education/master/programmes/civil-engineering-management/specialisations/)

The CME Master's programme is the same as the CEM track Construction Management and Engineering. Students can select either the profile '*Markets & Organization of Construction*' or '*Digital Technologies in Constructions*'.

Detailed information on the curriculum, profile courses and suggested profile electives for each profile can be found on the programme's websites:

- [www.utwente.nl/en/cem/](http://www.utwente.nl/en/cem/)
- [www.utwente.nl/en/cme/](http://www.utwente.nl/en/cme/)

### ARTICLE 3.4 INDIVIDUALISED PROGRAMME

The Examination Board decides on the received request of a student for permission to take an individualised programme as referred to in Article 7.3j WHW. The Examination Board assesses whether an individualised programme is appropriate and consistent within the domain of the educational programme and whether the level is high enough in light of the attainment targets of the programme.

### ARTICLE 3.5 STUDY ABROAD

1. The programme wants to stimulate all students to have an international experience during their studies. This can be a graduation project and/or attending a number of regular courses at a foreign university (See Article 4.4 for courses and article 6.1. for graduation).
2. Studying abroad requires consultation with the Exchange Coordinator and approval of the track coordinator.
3. For graduation abroad the rules in article 6.1 apply.

## SECTION 4. STRUCTURE OF THE PROGRAMME

### ARTICLE 4.1 STRUCTURE IN GENERAL

1. The programme is fulltime and consist of 120 ECTS (1 ECTS = 28 hours of study). This equals 2 academic years, each divided into 4 quartiles.
2. Students who enter the programme select their track and profile prior to starting the programme. The student forwards his chosen track and profile to the office of educational affairs (BOZ).
3. The programme consists of at least (see Appendix A for full curriculum information):
  - a. Courses with a study workload of 80 ECs (consisting of courses of 5 EC each) of which at least 25 EC are profile courses, and 15 EC are free electives. The remaining courses are profile electives or profile courses.
  - b. The course 'Academic Research Skills for CEM/CME' of 5 EC
  - c. The course 'Preparation MSc-Thesis' of 5 ECs
  - d. A final Master Thesis of 30 EC
4. In consultation with a teacher, students are allowed to select and specify a Capita Selecta as free elective. The composition, size and assessment type are determined separately for each individual case.

### ARTICLE 4.2 COMPOSITION OF THE STUDY PROGRAMME

1. The students are responsible for setting up their own master's programme. The track coordinator (MSc-track coordinator) is available for consultation, e.g. in case of specific questions or exceptions.
2. At the start of the Master, the student can plan a meeting with the track coordinator for discussing the study programme. 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 Educational Affairs Office (BOZ).
3. 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.
4. Any deviations from the standard programme (4.1.3a) needs approval of the track coordinator (the track coordinator is mandated for this by the Examination Board)
5. Around the start of the Preparation MSc-thesis course, the final master's programme will be checked by BOZ. In case the profile requirements are satisfied, the profile will be administered in the student's examination programme in Osiris.
6. If a student includes profile electives from other programmes than CEM/CME, it is recommended to make a selection, such that most of the programme is still formed by CEM/CME courses. In case a student chooses 3 or more profile electives that are not offered by CEM/CME, the student needs approval of the track-coordinator.

### ARTICLE 4.3 FOLLOWING TWO UT MASTER PROGRAMMES SIMULTANEOUSLY

In the case of a student following two master's programmes, including at least one master's programme of the faculty of Engineering Technology, the boards of examiners concerned determine the specific requirements that the study programme of the student in question must meet.

### ARTICLE 4.4 INCLUDING INTERNATIONAL COURSES IN THE PROGRAMME

1. The incorporation of international courses or projects into the study programme requires the prior approval of the track coordinator.
2. The motivated request includes the necessary information on the courses and institution, on the basis of which the track coordinator can determine the level and content. A UT teacher who provides a comparable course can be asked for advice. In principle, the international course must have a level equivalent to that of UT master courses.
3. No international courses may be included that substantially overlap with regular UT courses that have already been completed or that still have to be completed.
4. The maximum number of ECTS for international courses which can be included in the programme is 15 ECTS. After approval of the mandated track coordinator the remaining courses can be listed as 'extracurricular courses' on the diploma supplement, provided that the courses are part of a recognised master's programme.
5. If needed, BOZ calculates the number of ECTS by using the Credit Conversion Table of the UT.
6. Where possible, BOZ uses the international names of the courses on the Diploma Supplement.

## SECTION 5. TEACHING AND ASSESSMENT

### ARTICLE 5.1 ASSESSMENT IN GENERAL

1. Each course concludes with an examination. The examination consists of one or more tests.
2. A test or examination may take several forms, e.g. a written test, an assignment, an oral test, practical exercises or a combination of the aforementioned. Tests and examinations can be administered online (see Article 5.3).
3. The Programme Director ensures that at least the following details of the courses are published in Osiris not less than four (4) weeks in advance: scope, learning objectives and content, language of tuition and assessment, prerequisites, required and recommended study materials, design of teaching methods and assessment.
4. The possibility of unconditional access to at least one resit of written and oral examinations must be offered for each course in the same academic year. Practical exercises or projects can be completed at least once per academic year.
5. Absence during a study period may result in the failing of tests, examinations, projects, or practical exercises. In the event of force majeure (e.g. illness), the student must contact the lecturer and/or study adviser as soon as possible.
6. Information on the practical procedures regarding the conduct of examinations and completing projects is available in the Rules and Regulations of the Examination Board.
7. Prior to an exam the student has the right to inspect model test questions that are representative of the test or examination, as well as their keys and the norm for assessment.
8. The time allotted to administering a test may not exceed three hours. Exceptions in this regard are listed in Article 7.4. If the examiner wishes to use a form of assessment that requires more than three hours, the examiner must, with due regard for article 5.1.3, ask the Examination Board for approval to deviate from the above.

### ARTICLE 5.2 EXEMPTIONS

1. The Examination Board may grant an exemption to students at their request for one or more examinations or tests. To this end, the student should demonstrate having sufficient knowledge and skills in relation to the examination concerned or the test in question.
2. An exemption granted by the Examination Board will be registered in Osiris under the course or courses, or components thereof, by means of an EX (exemption).
3. Students cannot be compelled to take additional courses or components of courses in their curriculum instead of an exemption that has been granted.
4. Students may also be exempted from practical exercises if they can demonstrate that a required practical exercise will likely give rise to a personal moral dilemma. In such cases, the Examination Board will determine whether the component can be completed in another manner and in what way.
5. A request for an exemption of one or multiple tests or examinations will be judged by the Examination Board on the conditions set out in its Rules and Regulations.

### ARTICLE 5.3 ONLINE ASSESSMENT

1. If an examination or test is administered using online surveillance<sup>1</sup> or online proctoring<sup>2</sup>, the Examination Board may set further rules and conditions for online (proctored) assessment.
2. Further information and detailed rules on online assessment can be found on the university's [website](#).

### ARTICLE 5.4 ORAL EXAMINATIONS

1. If the student or the examiner wishes a third party to be present when administering an oral examination, then a request to this end must be submitted to the Programme Director at least fifteen working days prior to the oral examination. The student and the examiner will be notified of the Programme Director's decision not less than five working days in advance. The Programme Director must inform the Examination Board of the decision. Public graduation symposia, public presentations and group tests are excluded from this provision.
2. If the Examination Board has decided that members of the Examination Board or an observer on behalf of the Examination Board is to be present during the administration of an oral examination, then the Examination Board is to make this known to the examiner and the student at least one working day before the oral examination.

---

<sup>1</sup> Camera surveillance of the student or students during an unrecorded test, using for example Canvas, Teams, etc.

<sup>2</sup> Surveillance of the student or students using special *proctoring* software, such as Proctorio.

## ARTICLE 5.5 ASSESSMENT PLAN

1. The assessment plan of a course is drawn up by the examiner or examiners and is determined by the Programme Director. The Examination Board provides advice on the assessment plan.
2. The assessment plan must be published in Canvas at least two weeks before the start of the quartile.
3. The assessment plan of a course must include:
  - a. how the learning objectives of the course is assessed and when they are attained;
  - b. the period of validity of the result of the test or tests;
  - c. in which weeks examinations, tests, resits and discussion are held (the precise times and dates will be announced via TimeEdit);
  - d. any required minimum grade per test; a minimum grade for a test may not be set higher than 5.5;
  - e. the composition of the final grade (including weighing factors);
  - f. if applicable: information on resits (such as conditions, compensation options and grading periods).
4. The Programme Director may modify the assessment plan during the course:
  - a. The assessment plan may only be changed in consultation with the examiner of the course.
  - b. The Programme Director will consult the Examination Board before any changes to the form or manner of administering an examination or one or more tests. If the change only involves moving tests to a timeslot other than as shown in the timetable, the Programme Director will inform the Examination Board of the decision as soon as possible.
  - c. Students are to be informed immediately of the change via the digital learning environment.
5. Changes to the assessment plan may not put students at an unreasonable disadvantage. The Examination Board may take special measures in individual cases
6. Oral examinations and other examination components not listed in the assessment plan will be held at a time set by the examiner(s) and the student together and, if the student so desires, within a month after the conclusion of the education for the examination unit in question.
7. The examiner may deviate from the published examination method after approval of the Examination Board. The examiner will inform the students of this change immediately.

## ARTICLE 5.6 REGISTRATION

1. Registration in Osiris is required prior to participating in a course<sup>3</sup>. The deadline for registering for a course is the Wednesday prior to the start of the new quartile.
2. Upon registering for the course, the student will automatically be registered for the assessments associated with the teaching period of the course. The student is automatically de-registered from the resit opportunity if a sufficient grade is obtained for the first test opportunity. In such case, students still have the opportunity to re-register for the resit on their own initiative if they wish to make use of that resit opportunity, despite having obtained a sufficient grade for the first test opportunity<sup>4</sup>.

## ARTICLE 5.7 RESULTS

1. Results of examinations, tests or components of tests must be announced to students. Osiris is used for the formal<sup>5</sup> registration of grades for examinations and in some cases also for tests.
2. Test results are expressed in a grade from 1 to 10 with a single decimal, or as 'pass' / 'fail'.
3. The examination result of a course, as determined by the examiner, is expressed in half grades from 1.0 to 5.0 and from 6.0 to 10.0<sup>6</sup>, with grades only being rounded in the final phase<sup>7</sup> of the assessment of a course and in accordance with the schedule below:

---

<sup>3</sup> The applicable registration deadlines are mentioned on the webpage [www.utwente.nl/en/education/student-services/education/courses-and-modules/](http://www.utwente.nl/en/education/student-services/education/courses-and-modules/).

<sup>4</sup> [www.utwente.nl/en/ces/sal/exams/participants/](http://www.utwente.nl/en/ces/sal/exams/participants/)

<sup>5</sup> In case of any discrepancy between results published in Osiris and results communicated via any medium other than Osiris (e.g. Canvas, email), the results in Osiris will prevail. Article 8.2 still applies.

<sup>6</sup> In Osiris, a comma is used, based on the Dutch grading system (e.g. 7,0).

<sup>7</sup> Final phase: when all grades are known.



| If figure before the decimal (n)≠5 |           |
|------------------------------------|-----------|
| Grade ≥ n.00 and <n.25             | → n.0     |
| Grade ≥ n.25 and <n.75             | → n.5     |
| Grade ≥ n.75 and <(n+1).00         | → (n+1).0 |
| If figure before the decimal =5:   |           |
| Grade ≥ 5.00 and < 5.50            | → 5.0     |
| Grade ≥ 5.50 and <6.00             | → 6.0     |

- Examination results of 6.0 or higher are a pass.
- Examination results, if a pass, obtained at foreign universities will be registered as a P (*pass*). Examination results obtained at Dutch universities will be adopted one-to-one, with due regard for the provisions in paragraph 5.
- If more than one examination or test result has been recorded in Osiris for one and the same unit of study, the highest grade will apply.

#### ARTICLE 5.8 ASSESSMENT DEADLINE, EXAMINATION AND TEST DATE

- The examiner is to inform the student of the result of an oral examination within one working day, unless, for the examiner, the oral examination is part of a series of oral examinations of the same course which are administered on more than one working day. In that case, the examiner is to determine and announce the result within one working day following the conclusion of the series of oral examinations.
- The result of a test is to be disclosed to the student within fifteen working days after the test date, with due regard for paragraph 7 below.
- The examination date is the date on which the test is taken with which the student definitively passes the course.
- The test date is the date on which a written or oral test is taken.
- If a test assessment is (among other things) dependent on completing one or more assignments or writing a paper or thesis, then the test date will be the deadline of submission of the final component (or the date of the last written or oral test).
- If a test resit is planned shortly after the first test, the results of the first test will be published at least five working days before the resit to give the student time to prepare.
- Should the examiner not be able to meet the deadline referred to in paragraphs 1, 2, 3, and 6 due to exceptional circumstances, then the examiner is to notify the Examination Board, providing reasons for the delay. The student concerned is to be informed of the delay immediately, and a new deadline for publication of the results will be set and notified to them. If the Examination Board is of the opinion that the examiner has not met the obligations, it may appoint another examiner to ascertain the result of the exam and determine the grade.

#### ARTICLE 5.9 PERIOD OF VALIDITY OF RESULTS

- The results of an examination that has been passed remain valid indefinitely. The period of validity of an examination that was passed may only be limited if the tested knowledge or understanding is demonstrably outdated or the tested skills are demonstrably outdated.
- Results of separate tests of a course that was failed expire after the academic year. The course must be repeated in its entirety in the next academic year. Any exceptions are listed in the assessment schedule in accordance with Article 5.5 paragraph 3.
- If the period of validity of a result of an examination is limited as described in paragraph 1, at least the rules in Article 7.2 of these regulations and Article 7.10 paragraph 4 WHW are taken into account by the Examination Board when assessing the extension of the limited validity period.

#### ARTICLE 5.10 RIGHT OF DISCUSSION AND INSPECTION

- Students are entitled to discuss and review their test together with the examiner, and the examiner is to explain the assessment. This can be done individually or in a group setting, either in person or by using an online tool. The examiner chooses the setting of methods of and tools for discussion.
- Individual and group discussions must take place no later than five weeks after the publication of the test or examination results, but at least three working days prior to the next test opportunity, in the (online) presence of the examiner or a substitute designated for that purpose.
- If the examiner organises a group discussion of the assessment, the student must use that opportunity to exercise the right to discussion referred to in paragraph 1. If a student cannot attend the group discussion or if the student is not given the opportunity at the group discussion to discuss the reasons for the examiner's assessment of the test with the examiner, the student may submit a request for individual discussion with the

examiner no later than on the first working day following the group discussion. Students are informed about the group discussions and the aforementioned deadline. The individual discussion is to take place no later than three working days prior to the next test opportunity.

4. If there is no group discussion of the test, then a student may submit a request to the examiner for an individual discussion within ten days after publication of the results. The individual discussion is to take place no later than three working days prior to the next test opportunity.
5. Students are to be given the opportunity to inspect their assessed work for a period of two years following the assessment.
6. The Examination Board may set additional programme-specific rules and conditions regarding the right of discussion and inspection.

#### ARTICLE 5.11 RETENTION PERIOD FOR TESTS

1. The retention period for test assignments, keys, papers and the assessments of written tests is two calendar years.
2. The retention period for final master's projects is a minimum of seven calendar years.

#### ARTICLE 5.12 EXAMINATION BOARD

1. In line with Articles 7.12a and 7.12b WHW:
  - a. the Faculty Board appoints an Examination Board for each educational programme or group of programmes;
  - b. Examination Boards determine the rules and regulations for the examiners, examinations and final examinations without further consultation.
2. The Examination Board makes objective and well-grounded decisions on whether students meet the requirements in terms of their end level and guards the standards for the end level itself.

#### ARTICLE 5.13 QUALITY ASSURANCE

The quality of education is systematically monitored according to the Plan-Do-Check-Act (PDCA) cycle. The quality assurance system consists of at least the following parts:

1. The organisation of the faculty with all actors who play a role in the management, organisation, development and execution of the study programme. Through a clear division of tasks and responsibilities and mutual coordination, the actors jointly ensure a high-quality study programme.
  - a. The Programme Director is responsible for monitoring the quality of the educational programme.
  - b. The Programme Director is responsible for evaluating the programme.
2. The evaluation system that monitors the quality of the study programme and provides the actors with information on the quality and is therefore aimed at educational development and continuous quality improvement. This will at least include the execution of the following activities on an annual basis:
  - a. The Programme Director writes an annual programme development plan, which is subject to advice from the Programme Committee. Improvement points regarding the courses are made available to students and staff.
  - b. Course evaluations: a course will be comprehensively evaluated at least once every two years. Upon the request of the Programme Committee, the Civil Engineering Evaluation Committee performs evaluation reports each quarter which are discussed in the Programme Committee meeting. If a course does not meet the criteria mentioned in the evaluation plan, the programme director will have a meeting with the lecturer, and it will be evaluated again the next time it is taught to determine whether appropriate measures have been taken.
  - c. Incidental activities: if necessary, further research will be conducted in addition to the aforementioned activities (e.g. research into facilities, time usage studies, exit studies, questionnaires among alumni, etcetera).
  - d. Yearly analysis of the results of the NSE (National Student Survey) and the NAE (National Alumni Survey): Based on the analysis, UT-wide, faculty-specific and/or programme specific improvement actions can be identified.
  - e. Educational professionalisation a. Members of the scientific staff must have a (university) teaching qualification (Basis Kwalificatie Onderwijs) or given the opportunity to acquire/maintain this qualification.
  - f. Performance Reviews: Results of activities stated in the paragraphs above are brought to the attention of chair holders, to allow them to address these issues in their annual performance appraisals with all employees.
3. Improvement points regarding the courses are made available to students and staff.

## SECTION 6. FINAL EXAMINATION AND DEGREE

### ARTICLE 6.1 FINAL EXAMINATION

*Explanatory notes: Article 7.10, paragraph 2 and Article 7.11*

#### ARTICLE 6.1.1 GENERAL

1. The master's final examination is considered to be complete when the student has passed all course examinations in the programme. The Examination Board may, under conditions that it has set, determine that not every examination has to be completed successfully to determine that the master's final examination has been successfully completed.
2. The date of the final examination is the date on which the student completes the final course of the degree programme.
3. A student may submit a written request, giving reasons, to the Examination Board to postpone the final examination, and thus to postpone the awarding of the diploma. The maximum duration of any postponement that can be granted is twelve months, in principle. In exceptional cases<sup>8</sup>, the student may have valid reasons for requesting that the awarding of the diploma be postponed for more than twelve months.
4. If the student has requested postponement based on the provisions of paragraph 3, then the date of the examination will be the date on which the Examination Board decides that the student has passed the final examination subsequent to the postponement.
5. Students who have successfully met all requirements for the master's final examination will be awarded a Master of Science (MSc) degree.
6. The degree conferred is stated on the diploma.

#### ARTICLE 6.1.2 REQUIREMENTS

1. The graduation period comprises of a total of 35 EC and consists of the course Preparation MSc thesis (5 EC) and the MSc thesis (30 EC).
2. Prior to the start of the Preparation MSc Thesis, the student must sign up in Mobility Online, using the step-by-step plan mentioned in the Master Thesis Assignment Student Guide that can be found on the CEM/CME Canvas website.
3. The student can start with the Preparation MSc-thesis course when all other parts of the master's programme have been completed except for a maximum of two courses (10 EC). The student can only start the MSc-thesis after completion of the preparatory course and if no more than 5 EC are missing from the required 85 EC of coursework. The UT supervisor may, after consultation with the Study Advisor, deviate from these restrictions if it causes considerable delay for the student.
4. The purpose of the course Preparation MSc Thesis is to prepare the student for the realisation of the MSc thesis. The preparation phase results in at least a detailed proposal for the MSc thesis.
5. The preparation phase consists of optional courses and/or independent literature study in relation to the MSc thesis.
6. The MSc thesis must be executed within the field of one of the specialisations of the programme, either within a certain research group or at an external organisation.
7. The student is the only author of the MSc thesis.
8. 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 UT supervisor and/or the graduation supervisor(s) to the MSc thesis report are not allowed.
9. The CEM/CME programme aims to avoid confidentiality agreements as much as possible. If an external organisation insists on having a confidentiality agreement, the confidentiality agreement designed by the Faculty of Engineering Technology should be used (to be found at [www.utwente.nl/en/et/student-mobility/documents/](http://www.utwente.nl/en/et/student-mobility/documents/)).
10. By default the MSc thesis is done individually. However, joint graduation is possible. In that case, independent completion of the project is defined as:
  - a. The student studies on an individual basis: each student has their own (sub)project with a separate research question and responsibility;
  - b. The graduation results in an individual report and individual presentation;
  - c. If an (external) client is interested in a joint report only, the supply of this report is the responsibility of the students.

---

<sup>8</sup> Some examples (by way of illustration, not to exclude other situations): the student follows a double bachelor's programme, the student needs more time for a pre-Master's programme, an extensive extra-curricular activity requires more than twelve months.

### ARTICLE 6.1.3 DURATION

1. The planned end date of the MSc thesis assignment is determined during the preparation MSc thesis. At the beginning of the graduation period, there needs to be agreements on 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.
2. The duration of the Preparation MSc thesis corresponds with the applicable study load of 5 EC. The duration of the MSc thesis corresponds with the applicable study load of 30 EC (~5 months). Avoidable delays are a violation of deadlines and/or the need of a postponed or second 'Green light' meeting. This will result in the limitation of the highest attainable result.
3. All agreements (as mentioned above) are formalised in a proposal.
4. The UT supervisor and the graduation supervisor(s) share the responsibility for explicit monitoring of progress during the graduation period.
5. If the graduation report is handed in (preferably by the agreed date) and is approved, the graduation committee give "green light" to apply for the final examination (for details: see the MSc thesis student guide at <https://canvas.utwente.nl/courses/6773>). If the report is not approved, the graduation committee indicates clearly what additions and/or changes are required. A new date is set by which the revised report must be handed in. If necessary, this procedure is repeated.
6. If the graduation committee agrees that the work done by the student is insufficient, they may decide in consultation with the MSc-thesis coordinator of the department, that the student must do an alternative assignment. The same applies if the student fails to hand in a thesis or hands in far too late.

### ARTICLE 6.1.4 GRADUATION COMMITTEE

1. The student starts the Preparation MSc thesis by requesting a conversation with the MSc thesis coordinator of the relevant specialisation.
2. The MSc thesis coordinator of the relevant specialisation selects a UT supervisor. The UT supervisor puts together a graduation committee. If necessary, the UT supervisor also arranges a daily supervisor. When the MSc thesis assignment is carried out externally, the UT supervisor also makes sure that there is a person in charge of the guidance of the graduate at the external location (external supervisor).
3. The graduation committee consists of:
  - a. The UT supervisor;
  - b. The daily supervisor, or a second staff member of the UT if the UT supervisor is also the daily supervisor;
  - c. Possible external member for an advisory role in the assessment.
4. The graduation committee is responsible for the final assessment. The external supervisor has an advisory role only.
5. The UT supervisor is a professor or an associate professor (UHD) who is a member of the scientific staff of CE assigned by the Examination Board. The daily supervisor is a staff member, postdoc or PhD candidate of the UT who acts as the daily supervisor for the MSc thesis if this is not done by the UT supervisor. If the daily supervisor is a PhD candidate, the PhD candidate must have passed the Qualifier.
6. Professors from other programmes can be assigned by the Examination Board as a UT supervisor 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.
7. If required by the nature of the project, the UT supervisor can extend the committee with eligible experts.
8. At the request of the responsible UT supervisor, the Examination Board can make an exception to the requirements for the composition of the graduation committee.

### ARTICLE 6.2 DIPLOMA

#### *Explanatory notes: Article 7.11 WHW*

1. The Examination Board will award a diploma as proof that the student has satisfied all the requirements of the final examination once the institutional administration has confirmed that the procedural requirements for awarding the diploma have been met. The date indicated on the diploma (i.e. the date of the final examination) is the date on which the student completed the final course of the degree programme.
2. The diploma will be signed by the chair of the Examination Board. If the chair is absent, one of the members of the Examination Board may also sign the diploma.
3. The following information is to be stated on the diploma:
  - a. the student's name and date of birth;

- b. the name of the institution and the degree programme as stated in the register referred to in Article 6.3 WHW;
  - c. the date of the final examination;
  - d. the course components of the final examination;
  - e. the degree conferred (in accordance with Article 7.10a WHW);
  - f. where appropriate, the specific qualifications associated with the degree (with due consideration for Article 7.6, paragraph 1 WHW);
  - g. the date on which the programme was last accredited or the date on which the programme passed the new programme assessment (Article 5a.11 WHW).
4. An International Diploma Supplement is to be appended to the diploma. This supplement is intended to provide insight into the nature and content of the degree programme to promote the international recognition of the programme, among other aspects. The diploma supplement is to include the following information at a minimum:
- a. the name of the programme and the name of the university;
  - b. that the programme was offered at an institution for academic education;
  - c. a description of the programme content; an indication of any specialisation, if applicable;
  - d. the study load of the programme;
  - e. the final examination components and results, based on the registration of grades in Osiris;
  - f. examinations passed by the student that are not part of the final examination;
  - g. if the student has successfully completed an honours programme while on the master's programme, then this fact will be stated on the diploma supplement as an extracurricular programme;
  - h. the student's average grade, weighted by credits (Grade Point Average, GPA). The diploma supplement indicates how the average grade is calculated.
5. The Programme Director determines if a special distinction (such as cum laude) is applicable to the degree programme and determines the requirements to qualify for a special distinction (see Article 6.3). Awarding the diploma and (the consideration for) awarding a distinction such as cum laude lies with the Examination Board<sup>9</sup>. If the Examination Board has awarded a specific distinction (e.g. cum laude) to the student, then this is to be mentioned on the diploma.
6. Students who have successfully completed more than one examination but cannot be awarded a diploma as referred to in paragraph 1, will receive, at their own request, from the Student Services Desk a statement prepared by or on behalf of the Examination Board which in any case will state the results of the examinations the student in question has passed.

#### ARTICLE 6.3 WITH DISTINCTION / CUM LAUDE

1. When students have demonstrated exceptional competence and ability in their master programme, this can be stated on the diploma with the words 'Cum Laude'.
2. The Examination Board awards this judicium when a student meets each of the following conditions:
  - i. The weighted average of the grades for the parts of the final examination, excluding the final grade for the master thesis, is at least 8.0. Parts for which no assessments in the form of a grade are given or for which the student was exempted are disregarded for this calculation;
  - ii. The minimum grade for all separate courses within the programme is 7.0;
  - iii. The number of exemptions does not exceed one-third of the volume of the programme (the Examination Board can grant students exemption from one or more complete courses at their request. To this end, the student will demonstrate that he has completed a component of a similar content, size and level of a university or higher professional education programme or has, as a result of work and/or professional experience, sufficient knowledge and skills regarding the course concerned).
  - iv. The final grade for the master thesis is at least 8.0;
  - v. The master's programme was completed within 2.5 years, unless special circumstances justify a longer delay.
  - vi. "Cum Laude" shall not be awarded if the student has previously been found to have committed fraud or plagiarism during the completion of the pre-master or master's programmes.
3. If these guidelines are not fully met, the UT supervisor can submit a substantiated proposal to the Examination Board to award the designation 'Cum Laude'. In that case, the special circumstances and the exceptionality of the achievement must be properly substantiated. The judicium 'Cum Laude' is granted when all members of the Examination Board express their consent.

<sup>9</sup> Personal circumstances are taken into account. If it considers activism, an acknowledged fulltime board year is excluded from the calculation of the nominal study load for cum laude.

## SECTION 7. STUDENT GUIDANCE AND FACILITIES

*Explanatory notes: Article 7.13 paragraph 2u and Article 7.59 WHW.*

*Explanatory notes: Article 7.13 paragraph 2m WHW and Article 2 of the Equal Treatment of Disabled and Chronically Ill People Act (WGBH/CZ).*

### ARTICLE 7.1 STUDENT GUIDANCE

1. The Faculty Board is responsible for student guidance.
2. Student support and guidance includes 'decentralized' guidance, as provided within study programmes, and 'central' guidance, as provided by the Centre for Educational Support.
3. Student guidance includes guidance with questions or problems with regard to career orientation and career choices and guidance with problems that affect study progress. Students are offered personal and professional student (career) guidance for optimal study progress. Where possible, needs for specific guidance are met.
4. Each student is assigned a study adviser.
5. The study adviser supervises students and advises them on all aspects of the studies, also on personal circumstances that may be affecting the student's studies.
6. A systematic method on how students are monitored and obstruction in study progress is signalled is documented by the programme (for example in a policy plan or an annual cycle).
7. Information about the guidance facilities of the study programme is in any case available on the website of the study programme.

### ARTICLE 7.2 SPECIAL FACILITIES

1. If students wish to exercise their right to specific supervision or special facilities, they should contact the study adviser. The study adviser will record the agreements made with the student in Osiris.
2. A student is entitled to special facilities in case of demonstrable circumstances beyond the student's control or extenuating personal circumstances. The facility may provide for dispensation from or an additional opportunity to sit examinations or tests to be granted and/or for specific facilities to be made available. Such dispensation and additional resits may only be granted by the Examination Board.
3. Personal circumstances include illness, physical, sensory or other functional disability or pregnancy of the student involved, extenuating family circumstances, participation in top-level sports or arts and membership of the University Council, Faculty Council, Programme Committee or a Category 3 or 4 board (student activism) in accordance with the FOBOS Regulations.
4. Students may file a request (supported by documentary evidence) for assessment of their personal circumstances to the Personal Circumstances Committee (CPO). This request is to be filed in consultation with the study adviser. The CPO will assess the validity, nature, severity and duration of the personal circumstances and will issue an advisory opinion on these matters. The CPO's advisory opinion, issued to the Programme Director and the study adviser concerned, will be taken into account in the Programme Director's decision-making referred to in paragraph 3.

### ARTICLE 7.3 STUDYING WITH A FUNCTIONAL IMPAIRMENT

1. A functional impairment is defined as having an illness, condition, impairment or handicap that might impede or otherwise constitute a barrier to the student's academic progress.
2. Facilities are to be aimed at removing individual barriers in following the degree programme and/or when it comes to taking examinations and tests. These facilities may be related to access to infrastructure (buildings, classrooms and teaching facilities) and study materials, adjustments to the form of assessment, alternative learning pathways or a customised study plan.

### ARTICLE 7.4 REQUEST FOR FACILITIES

1. The study adviser and the student concerned will discuss the most effective facilities that can be provided for the student.
2. Based on the discussion referred to in paragraph 1, the student is to submit a request for facilities. This request should be submitted to the study adviser, who has been mandated by the Faculty Board, preferably three months before the student is to participate in classes, examinations and tests for which the facilities are required.
3. The request should be supported by documents that are needed to enable an assessment to be made.
4. The study adviser will decide on the admissibility of the request and will inform the student of the decision within twenty working days after receipt of the request or sooner if the urgency of the request dictates.
  - a. Should the request be granted, the period of validity will also be indicated.

- b. If the request is not granted, or only partly granted, the study adviser will inform the student of the justification for not granting the request as well as the possibilities for filing an objection and an appeal with the Complaints Desk.
  - c. Students who are dyslexic will be granted a maximum of 15 extra minutes for each hour that a test or examination is officially scheduled.
5. The study adviser shall inform the relevant parties in good time about the facilities that have been granted.
  6. The applicant and the study adviser will evaluate the facilities before the end of the period for which they have been granted. During this evaluation, the parties discuss the effectiveness of the facilities provided and whether they should be continued. No evaluation takes place of facilities granted to students because of the functional impairment dyslexia.



## SECTION 8. FINAL PROVISIONS

### ARTICLE 8.1 CONFLICTS OF THE REGULATIONS

If other additional regulations and/or provisions pertaining to education and/or examinations conflict with this EER, the provisions in this EER will prevail.

### ARTICLE 8.2 ADMINISTRATIVE ERRORS

If, following the publication of a result, a marks sheet, or a student's progress report a manifest error is discovered, the discoverer, be it the university or the student, is required to make this known to the other party immediately upon finding the error and to cooperate in rectifying the error.

### ARTICLE 8.3 AMENDMENTS TO THE REGULATIONS

1. Substantive amendments to these Regulations are enacted by the Faculty Board in a separate decision.
2. In principle, substantive amendments to these Regulations do not apply to the current academic year. Amendments to these Regulations may apply to the current academic year if the interests of the students are not prejudiced within reasonable bounds, or in situations of force majeure.
3. Amendments to these Regulations have no effect on earlier decisions by the Examination Board.

### ARTICLE 8.4 TRANSITIONAL ARRANGEMENTS

1. In the case of amendment of these education and examination regulations, the Faculty Board will adopt a transitional arrangement, as necessary.
2. The transitional arrangement is to be published on the degree programme's website.
3. Changes to the curriculum are to be announced prior to the academic year in which the changes take effect. No guarantee can be made that all programme courses that were part of the curriculum when students enrolled in a programme will continue to be part of the curriculum. The final master's examination is to be based on the curriculum most recently adopted by the Faculty Board.
4. The transitional arrangement will always include:
  - a. the courses, which have been dropped, that are equivalent to courses from the current curriculum;
  - b. an indication that if a course that does not involve a practical is dropped from the curriculum, then students are to have at least two opportunities in the following academic year to take a written or oral test or examination or to undergo another form of assessment;
  - c. an indication that if a course with practical exercises is dropped from the curriculum and there is no opportunity in the subsequent academic year to complete the practical exercises concerned, then at least one course will be designated that may be completed as a substitute for the course that has been dropped;
  - d. the period of validity of the transitional arrangement.
5. The transitional arrangement must be approved by the Examination Board.
6. In exceptional cases and to the student's benefit, the Examination Board may deviate from the prescribed number of opportunities to sit examinations and/or tests related to courses that have been dropped from the curriculum.

### ARTICLE 8.5 ASSESSMENT OF THE EDUCATION AND EXAMINATION REGULATIONS

1. The Faculty Board is responsible for the regular assessment of the education and examination regulations, with specific emphasis on the study load.
2. Based on Article 9.18 WHW, the Programme Committee has a partial right of consent of and a partial right to be consulted on parts of the education and examination regulations.
3. The Programme Committee is responsible for the annual assessment of the manner in which the education and examination regulations are implemented.

### ARTICLE 8.6 APPEAL AND OBJECTIONS

An appeal and objections must be submitted in writing to the [University of Twente Complaints Desk](#) within six weeks after notification of a decision to the student.



#### ARTICLE 8.7 HARDSHIP CLAUSE

In cases of demonstrable unreasonableness and unfairness of a predominant nature, the Examination Board, the Faculty Board or the Programme Director may deviate from its stipulations, provided that doing so does not negatively affect the student. This depends on which body is authorised or has the duty according to these Regulations to take a decision on or make an exception to a provision in these Regulations. This decision must be motivated and announced in writing to the student, the Examination Board, the Faculty Board, the Programme Director or the Office of Educational Affairs (BOZ).

#### ARTICLE 8.8 PUBLICATION

The education and examination regulations and the Examination Board's rules and regulations are to be published on the degree programme's website.

#### ARTICLE 8.9 ENTRY INTO FORCE

These Regulations enter into force on 1 September 2024 and replace the Regulations dated 1 September 2023. Adopted by the Faculty Board, having regard to Article 9.5, 9.15 paragraph 1a, 7.13 paragraph 1 and 2, 9.38b, 9.18 paragraph 1a and 7.59 WHW, and after approval by the faculty council.

## APPENDIX A. CURRICULUM INFORMATION

Please note that up-to-date information on assessment forms and prior knowledge is always included in Osiris and the information provided below might change due to circumstances. Please click on the course name to go to the Osiris course information of the course.

Table 1: Curriculum MSc Track Construction Management & Engineering

| Construction Management and Engineering 2024-2025   |    |          |   |    |          |
|---|----|----------|---|----|----------|
| PROFILES  |    |          |   |    |          |
| Markets & Organization of Construction  |    |          | Digital Technologies in Construction  |    |          |
| Profile Courses (≥25 EC)  | EC | Quartile | Profile Courses (≥25 EC)  | EC | Quartile |
| Civil Engineering Challenges*   | 5  | 1        | Civil Engineering Challenges*   | 5  | 1        |
| Legal & Governance Aspects  | 5  | 1        | Legal & Governance Aspects  | 5  | 1        |
| Planning & Process Management   | 5  | 1        | Planning & Process Management   | 5  | 1        |
| Sustainable Transportation Infrastructure   | 5  | 1        | Construction Process Management   | 5  | 2        |
| Transitions in Civil Engineering*   | 5  | 2        | Circular Systems Engineering  | 5  | 3        |
| Construction Process Management   | 5  | 2        | Digital Technologies in Construction  | 5  | 3        |
| Circular Systems Engineering  | 5  | 3        | Technology and Innovation in Road Construction  | 5  | 4        |
| Infrastructure Asset Management   | 5  | 4        |   |    |          |
| <b>Profile Electives (~40 EC)</b><br><i>- Free to choose any of the CEM-courses (pay attention to the required prior knowledge)</i><br><i>- Below: list of CEM-courses that fit best in this profile (in addition to profile courses)</i>                               |    |          | <b>Profile Electives (~40 EC)</b><br><i>- Free to choose any of the CEM-courses (pay attention to the required prior knowledge)</i><br><i>- Below: list of CEM-courses that fit best in this profile (in addition to profile courses)</i>                               |    |          |
| Suggested Profile Electives   | EC | Quartile | Suggested Profile Electives   | EC | Quartile |
| Construction Supply Chains and Digitization   | 5  | 1        | Sustainable Transportation Infrastructure   | 5  | 1        |
| Safety by Design for Products, Equipment and Systems (ME)   | 5  | 2        | Construction Supply Chains and Digitization   | 5  | 1        |
| Urban Resilience in a Changing Climate  | 5  | 3        | Structural Health Monitoring for Smart Infrastructure   | 5  | 1        |
| Value Management  | 5  | 3        | Transitions in Civil Engineering*   | 5  | 2        |
| Culture in International Construction   | 5  | 4        | BIM and 5D Planning   | 5  | 2        |
| Procurement Strategies and Tendering  | 5  | 4        | Safety by Design for Products, Equipment and Systems (ME)   | 5  | 2        |
|   |    |          | Simulation and Optimization of Construction Processes   | 5  | 3        |
|   |    |          | Value Management  | 5  | 3        |
|   |    |          | Subsurface Infrastructure Engineering   | 5  | 4        |
|   |    |          | Infrastructure Asset Management   | 5  | 4        |
| GENERAL COURSES   |    |          |   |    |          |
| Free Electives (max 15 EC)  | EC | Quartile | Free Electives (max 15 EC)  | EC | Quartile |
| Any course from UT or approved other university**   |    |          | Any course from UT or approved other university**   |    |          |
| <i>On the CEM/CME Canvas page there is a list of courses from other MSc programmes available that fit this track. In some occasions, you can include courses from other programmes as a profile elective. In that case you need approval of your track-coordinator.</i> |    |          | <i>On the CEM/CME Canvas page there is a list of courses from other MSc programmes available that fit this track. In some occasions, you can include courses from other programmes as a profile elective. In that case you need approval of your track-coordinator.</i> |    |          |
| Other useful courses (0 EC)   | EC | Quartile | Other useful courses (0 EC)   | EC | Quartile |
| Boost your Competences  | 0  | 1,2,3,4  | Boost your Competences  | 0  | 1,2,3,4  |
| Thesis ***  | EC | Quartile | Thesis ***  | EC | Quartile |
| Academic Research Skills in CEM/CME   | 5  | 2,4      | Academic Research Skills in CEM/CME   | 5  | 2,4      |
| Preparation Master Thesis   | 5  | -        | Preparation Master Thesis   | 5  | -        |
| Master Thesis Construction  | 30 | -        | Master Thesis Construction  | 30 | -        |
| PLANNING AND CONSULTATION FOR THE MASTER PROFILES   |    |          |   |    |          |
| Track-coordinator: Dr.ir. Ruth Sloot - Coordinator Master Theses: Dr.ir. Robin de Graaf   |    |          |   |    |          |

\* Second year MSc course

\*\* an "approved university" is any university in The Netherlands (not HBO-schools), or any international university that is partner of the UT or of the faculty of ET. The Free Electives should be at MSc-level and should have no overlap with other courses in your programme. For courses from other universities, contact your track-coordinator.

\*\*\* Click here for the procedure of how to start the course Preparation MSc-thesis and your MSc-thesis project

Table 2: Curriculum MSc Track Traffic Engineering & Management

| Transport Engineering and Management 2024-2025   |    |          |  |    |          |
|--|----|----------|--|----|----------|
| PROFILES   |    |          |  |    |          |
| Integrated Urban Transport   |    |          | Transport and Logistics  |    |          |
| Profile Courses (≥25 EC)   | EC | Quartile | Profile Courses (≥25 EC)   | EC | Quartile |
| Civil Engineering Challenges*  | 5  | 1        | Civil Engineering Challenges*  | 5  | 1        |
| Planning & Process Management  | 5  | 1        | Simulation (IEM)   | 5  | 1        |
| Public Transport Modelling   | 5  | 2        | Traffic Operations   | 5  | 1        |
| Sustainable Transport  | 5  | 2        | Public Transport Modelling   | 5  | 2        |
| Rail Transport   | 5  | 2        | Data Science (BIT)   | 5  | 2 or 3   |
| Traffic Safety   | 5  | 2        | Network Modelling and Forecasting  | 5  | 3        |
| Data Science (BIT)   | 5  | 2 or 3   | Transportation & Logistics Management (IEM)  | 5  | 3        |
| Land Use and Transport Interactions  | 5  | 4        | Traffic Management   | 5  | 3        |
|  |    |          | Mathematical Optimization in Transport   | 5  | 4        |
|  |    |          | Smart Mobility   | 5  | 4        |
| <b>Profile Electives (~40 EC)</b>  |    |          | <b>Profile Electives (~40 EC)</b>  |    |          |
| - Free to choose any of the CEM courses offered (pay attention to the required prior knowledge)  |    |          | - Free to choose any of the CEM courses offered (pay attention to the required prior knowledge)  |    |          |
| - Below: list of CEM-courses that fit best in this profile (in addition to profile courses)  |    |          | - Below: list of CEM-courses that fit best in this profile (in addition to profile courses)  |    |          |
| Suggested Profile Electives  | EC | Quartile | Suggested Profile Electives  | EC | Quartile |
| Simulation (IEM)   | 5  | 1        | Planning & Process Management  | 5  | 1        |
| Traffic Operations   | 5  | 1        | Sustainable Transport  | 5  | 2        |
| Empirical Methods for Designers (IDE)  | 5  | 2        | Rail Transport   | 5  | 2        |
| Network Modelling and Forecasting  | 5  | 3        | Empirical Methods for Designers (IDE)  | 5  | 2        |
| Urban Resilience in a Changing Climate   | 5  | 3        | Traffic Safety   | 5  | 2        |
| Transportation & Logistics Management (IEM)  | 5  | 3        | Land Use and Transport Interactions  | 5  | 4        |
| Traffic Management   | 5  | 3        | Infrastructure Asset Management  | 5  | 4        |
| Infrastructure Asset Management  | 5  | 4        |  |    |          |
| Mathematical Optimization in Transport   | 5  | 4        |  |    |          |
| Smart Mobility   | 5  | 4        |  |    |          |
| GENERAL COURSES  |    |          |  |    |          |
| Free Electives (max 15 EC)   | EC | Quartile | Free Electives (max 15 EC)   | EC | Quartile |
| Any course from UT or approved other university**  |    |          | Any course from UT or approved other university**  |    |          |
| On the CEM/CME Canvas page there is a list of courses from other MSc programmes available that fit this track. In some occasions, you can include courses from other programmes as a profile elective. In that case you need approval of your track-coordinator. |    |          | On the CEM/CME Canvas page there is a list of courses from other MSc programmes available that fit this track. In some occasions, you can include courses from other programmes as a profile elective. In that case you need approval of your track-coordinator. |    |          |
| Other useful courses (0 EC)  | EC | Quartile | Other useful courses (0 EC)  | EC | Quartile |
| Boost your Competences   | 0  | 1,2,3,4  | Boost your Competences   | 0  | 1,2,3,4  |
| Thesis ***   | EC | Quartile | Thesis ***   | EC | Quartile |
| Academic Research Skills in CEM/CME  | 5  | 2,4      | Academic Research Skills in CEM/CME  | 5  | 2,4      |
| Preparation Master Thesis  | 5  | -        | Preparation Master Thesis  | 5  | -        |
| Master Thesis Traffic  | 30 | -        | Master Thesis Traffic  | 30 | -        |
| PLANNING AND CONSULTATION FOR THE MASTER PROFILES  |    |          |  |    |          |
| Track-coordinator: Prof.dr.ir. Eric van Berkum   |    |          |  |    |          |
| Coordinator Master Theses: Prof.dr.ir. Eric van Berkum   |    |          |  |    |          |

\* Second year MSc course

\*\* an "approved university" is any university in The Netherlands (not HBO-schools), or any international university that is partner of the UT or of the faculty of ET. The Free Electives should be at MSc-level and should have no overlap with other courses in your programme. For courses from other universities, contact your track-coordinator.

\*\*\* Click here for the procedure of how to start the course Preparation MSc-thesis and your MSc-thesis project

Table 3: Curriculum MSc Track Water Engineering &amp; Management

| Water Engineering and Management 2024-2025  |    |          |   |    |          |
|---|----|----------|---|----|----------|
| PROFILES  |    |          |   |    |          |
| Integrated Water Management   |    |          | River and Coastal Engineering   |    |          |
| Profile Courses (≥25 EC)  | EC | Quartile | Profile Courses (≥25 EC)  | EC | Quartile |
| Civil Engineering Challenges*   | 5  | 1        | Civil Engineering Challenges*   | 5  | 1        |
| Water Footprint Assessment  | 5  | 1        | River Flow Processes  | 5  | 1        |
| Hydrology   | 5  | 1        | Long Waves and Tidal Morphodynamics   | 5  | 1        |
| Hydrological Modelling and Forecasting  | 5  | 2        | Wave-Dominated Coastal Dynamics   | 5  | 1        |
| Sustainable Engineering   | 5  | 3        | Morphology*   | 5  | 2        |
| Integrated Water Management   | 5  | 3        | Mathematical Physics of Water Systems   | 5  | 3        |
| Urban Resilience in a Changing Climate  | 5  | 3        | Hydraulic Modelling   | 5  | 3        |
| Water and Climate   | 5  | 4        | River Morphodynamics  | 5  | 4        |
| <b>Profile Electives (~40 EC)</b><br><i>- Free to choose any of the CEM courses offered (pay attention to the required prior knowledge)</i><br><i>- Below: list of CEM-courses that fit best in this profile (in addition to profile courses)</i>                       |    |          | <b>Profile Electives (~40 EC)</b><br><i>- Free to choose any of the CEM courses offered (pay attention to the required prior knowledge)</i><br><i>- Below: list of CEM-courses that fit best in this profile (in addition to profile courses)</i>                       |    |          |
| Suggested Profile Electives   | EC | Quartile | Suggested Profile Electives   | EC | Quartile |
| Water Quality   | 5  | 1        | Water Quality   | 5  | 1        |
| River Flow Processes  | 5  | 1        | Hydrology   | 5  | 1        |
| Data Analysis in Water Engineering and Management   | 5  | 2        | Data Analysis in Water Engineering and Management   | 5  | 2        |
| Circular Systems Engineering  | 5  | 3        | Hydrological Modelling and Forecasting  | 5  | 2        |
| Hydraulic Engineering   | 5  | 3        | Hydraulic Engineering   | 5  | 3        |
| Building with Nature  | 5  | 4        | Advanced Soil Mechanics   | 5  | 3        |
|   |    |          | Building with Nature  | 5  | 4        |
|   |    |          | Water and Climate   | 5  | 4        |
|   |    |          | Geo Risk Assessment   | 5  | 4        |
| GENERAL COURSES   |    |          |   |    |          |
| Free Electives (max 15 EC)  | EC | Quartile | Free Electives (max 15 EC)  | EC | Quartile |
| Any course from UT or approved other university**   |    |          | Any course from UT or approved other university**   |    |          |
| <i>On the CEM/CME Canvas page there is a list of courses from other MSc programmes available that fit this track. In some occasions, you can include courses from other programmes as a profile elective. In that case you need approval of your track-coordinator.</i> |    |          | <i>On the CEM/CME Canvas page there is a list of courses from other MSc programmes available that fit this track. In some occasions, you can include courses from other programmes as a profile elective. In that case you need approval of your track-coordinator.</i> |    |          |
| Other useful courses (0 EC)   | EC | Quartile | Other useful courses (0 EC)   | EC | Quartile |
| Boost your Competences  | 0  | 1,2,3,4  | Boost your Competences  | 0  | 1,2,3,4  |
| Thesis ***  | EC | Quartile | Thesis ***  | EC | Quartile |
| Academic Research Skills in CEM/CME   | 5  | 2,4      | Academic Research Skills in CEM/CME   | 5  | 2,4      |
| Preparation Master Thesis   | 5  | -        | Preparation Master Thesis   | 5  | -        |
| Master Thesis Water   | 30 | -        | Master Thesis Water   | 30 | -        |
| PLANNING AND CONSULTATION FOR THE MASTER PROFILES   |    |          |   |    |          |
| Track-coordinator: Dr.ir. Bas Borsje<br>Coordinator Master Thesis: Dr.ir. Martijn Booij   |    |          |   |    |          |

\* Second year MSc course

\*\* an "approved university" is any university in The Netherlands (not HBO-schools), or any international university that is partner of the UT or of the faculty of ET. The Free Electives should be at MSc-level and should have no overlap with other courses in your programme. For courses from other universities, contact your track-coordinator.

\*\*\* Click here for the procedure of how to start the course Preparation MSc-thesis and your MSc-thesis project

Table 4: Curriculum MSc Track Integrated Civil Engineering Systems

| Integrated Civil Engineering Systems 2024-2025   |    |          |  |    |          |
|--|----|----------|--|----|----------|
| PROFILES   |    |          |  |    |          |
| Sustainability & Resilience  |    |          | Civil Engineering Structures   |    |          |
| Profile Courses (≥25 EC)   | EC | Quartile | Profile Courses (≥25 EC)   | EC | Quartile |
| Civil Engineering Challenges*  | 5  | 1        | Civil Engineering Challenges*  | 5  | 1        |
| Water Footprint Assessment   | 5  | 1        | Structural Health Monitoring for Smart Infrastructure  | 5  | 1        |
| Sustainable Transportation Infrastructure  | 5  | 1        | Data Analysis in Water Engineering and Management  | 5  | 2        |
| Transitions in Civil Engineering*  | 5  | 2        | Circular Systems Engineering   | 5  | 3        |
| Sustainable Transport  | 5  | 2        | Hydraulic Engineering  | 5  | 3        |
| Sustainable Engineering  | 5  | 3        | Advanced Soil Mechanics  | 5  | 3        |
| Circular Systems Engineering   | 5  | 3        | Subsurface Infrastructure Engineering  | 5  | 4        |
| Urban Resilience in a Changing Climate   | 5  | 3        | Building with Nature   | 5  | 4        |
| Water and Climate  | 5  | 4        | Geo Risk Assessment  | 5  | 4        |
| <b>Profile Electives (~40 EC)</b><br><i>- Free to choose any of the CEM courses offered (pay attention to the required prior knowledge)</i><br><i>- Below: list of CEM-courses that fit best in this profile (in addition to profile courses)</i>                |    |          | <b>Profile Electives (~40 EC)</b><br><i>- Free to choose any of the CEM courses offered (pay attention to the required prior knowledge)</i><br><i>- Below: list of CEM-courses that fit best in this profile (in addition to profile courses)</i>                |    |          |
| Suggested Profile Electives  | EC | Quartile | Suggested Profile Electives  | EC | Quartile |
| Legal & Governance Aspects   | 5  | 1        | Sustainable Transportation Infrastructure  | 5  | 1        |
| Hydrology  | 5  | 1        | Hydrology  | 5  | 1        |
| Planning & Process Management  | 5  | 1        | BIM and 5D Planning  | 5  | 2        |
| Construction Process Management  | 5  | 2        | Rail Transport   | 5  | 2        |
| Value Management   | 5  | 3        | Mathematical Physics of Water Systems  | 5  | 3        |
| Infrastructure Asset Management  | 5  | 4        | Technology and Innovation in Road Construction   | 5  | 4        |
| Land Use and Transport Interactions  | 5  | 4        | Water and Climate  | 5  | 4        |
| Building with Nature   | 5  | 4        |  |    |          |
| GENERAL COURSES  |    |          | GENERAL COURSES  |    |          |
| Free Electives (max 15 EC)   | EC | Quartile | Free Electives (max 15 EC)   | EC | Quartile |
| Any course from UT or approved other university**  |    |          | Any course from UT or approved other university**  |    |          |
| Other useful courses (0 EC)  | EC | Quartile | Other useful courses (0 EC)  | EC | Quartile |
| Boost your Competences   | 0  | 1,2,3,4  | Boost your Competences   | 0  | 1,2,3,4  |
| On the CEM/CME Canvas page there is a list of courses from other MSc programmes available that fit this track. In some occasions, you can include courses from other programmes as a profile elective. In that case you need approval of your track-coordinator. |    |          | On the CEM/CME Canvas page there is a list of courses from other MSc programmes available that fit this track. In some occasions, you can include courses from other programmes as a profile elective. In that case you need approval of your track-coordinator. |    |          |
| Thesis ***   | EC | Quartile | Thesis ***   | EC | Quartile |
| Academic Research Skills in CEM/CME  | 5  | 2,4      | Academic Research Skills in CEM/CME  | 5  | 2,4      |
| Preparation Master Thesis  | 5  | -        | Preparation Master Thesis  | 5  | -        |
| Master Thesis Construction/Traffic/Water   | 30 | -        | Master Thesis Construction/Traffic/Water   | 30 | -        |
| PLANNING AND CONSULTATION FOR THE MASTER PROFILES  |    |          | PLANNING AND CONSULTATION FOR THE MASTER PROFILES  |    |          |
| Track-coordinator: dr. Jord Warmink<br>Coordination of Master Theses: see coordinators from CME, TEM or WEM  |    |          | Track-coordinator: dr. Jord Warmink<br>Coordination of Master Theses: see coordinators from CME, TEM or WEM  |    |          |

\* Second year MSc course

\*\* an "approved university" is any university in The Netherlands (not HBO-schools), or any international university that is partner of the UT or of the faculty of ET. The Free Electives should be at MSc-level and should have no overlap with other courses in your programme. For courses from other universities, contact your track-coordinator.

\*\*\* Click here for the procedure of how to start the course Preparation MSc-thesis and your MSc-thesis project

## APPENDIX B. TRANSITION REGULATIONS

1. In the academic year 2024-2025 the courses Research Methodology & Academic Skills (201800040), Transport Research Project (201800055) and Advanced Research Skills in Water Engineering & Management (201800016) are replaced by the compulsory course Academic Research Skills in CEM/CME that is offered in the second and fourth quartile. Because the replaced courses for the CEM and TEM tracks were compulsory, students are obliged to take Academic Research Skills in CEM/CME course. For students who started their WEM or ICES track in 2023-2024 or earlier, the course is not compulsory but highly recommended. In case of any conflicts in the planning, please contact the programme coordinator ([coordinator-ce@utwente.nl](mailto:coordinator-ce@utwente.nl))
2. In the academic year 2023-2024 the ICES track has been restructured from 4 profiles to 2 profiles. Students who started their MSc programme in 2022-2023 have the choice to stick to the profiles that were offered in 2022-2023, or the new profiles as developed in 2023-2024. This profile choice must be sent by email to [boz-cem@utwente.nl](mailto:boz-cem@utwente.nl).
3. For students who started between 2010 and 2017, the programmes described in the Student Charter of CEM/CME from 2010 through 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.
4. 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.
5. 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 examination for the relevant course prior to the change, is entitled to two scheduled opportunities to resit the examination 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.

## APPENDIX C. PRACTICAL INFORMATION

### CONTACT 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               | P. Jansen, MSc.  |
| Study advisor                       | <i>Ir.</i> M.J.B. Duyvestijn                             |
| Pre-master coordinator              | E.C.M. Luijkx, MSc                                       |
| Bureau of Educational Affairs (BOZ) | <a href="mailto:BOZ-CE@utwente.nl">BOZ-CE@utwente.nl</a> |

### PROGRAMME COMMITTEE (PC)

The Programme Committee is responsible for monitoring and approving of the content as mentioned in WHW art.9.18, and quality of the programmes of Civil Engineering. In the Programme Committee both scientific staff and students are equally represented. The composition of the Programme Committee for Civil Engineering can be found on: <https://www.utwente.nl/en/ce/organization/olc/>

### EXAMINATION BOARD

The Examination board makes objective and well-grounded decisions on whether the student meets the requirements in terms of the end level, and guards the standards for the end level itself. Assessment is an important subject in this. Assessments refer 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: [\(www.utwente.nl/en/cem/organization/examination-board/\)](http://www.utwente.nl/en/cem/organization/examination-board/).

Next to these Education and Examination Regulations the Examination Board formulated 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.

- 1) These Rules and Regulations are applicable to:
  - a. The Bachelor programme Civil Engineering
  - b. The Master's programme Civil Engineering and Management
  - c. The Master's programme Construction Management and Engineering
- 2) This document is available at the website of the Examination Board CE/CEM/CME (<https://www.utwente.nl/en/cem/organization/examination-board/>) and at the programmes' website (<https://www.utwente.nl/en/cem/rules-and-regulations/>).

### STUDY ASSOCIATION

Management (CEM) or Construction Management and Engineering (CME). ConceptT supports students in their student life in three different categories: Professional, Educational and Social. Within these categories a wide range of activities are organised. From lunch lectures to study evenings and from a trip abroad to a gala. You can find more information on their website [www.concept.utwente.nl/home](http://www.concept.utwente.nl/home).

### FACILITIES

- 1) For all communication connected to the programme as well as in all administrative procedures the electronic learning environment Canvas, internet or intranet will be used. In the organisation 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 enrol with the University of Twente, each student will be provided with an individual student email account.
- 4) The programmes CEM and CME employ a Canvas site: <https://canvas.utwente.nl/courses/6773>. Most electronic communications by the programme will be conveyed via this site. All students are requested to enrol 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 online via the website of 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.

## 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 WHW. 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.

## TIMETABLES

Within reason, the parts of the programme will be spread evenly over the year, ensuring that the study load is spread evenly over the weeks of the programme. The timetables can be found at [www.utwente.nl/en/educational-systems/about-the-applications/timetabling-systems/TimeEdit/](http://www.utwente.nl/en/educational-systems/about-the-applications/timetabling-systems/TimeEdit/)

The timetable for each year consists of two semesters or four quarters. The last two weeks of each quarter are usually reserved for exams/resits and/or finishing assignments and/or projects. The study load of these subjects is distributed over an entire quartile.

## COLLABORATION WITHIN 4TU

- 1) The Master's degree programme Construction Management and Engineering is a 4TU MSc programme. The programme is offered at TU/e (Eindhoven University of Technology), TUD (Delft University of Technology) and UT (University of Twente). The courses and specialisations at each university are different. Each programme has a different CROHO number (programme registration according to the WHW).
- 2) Students are allowed to choose elective subjects from the list of elective/specialisation and core courses from each of the 3 programmes, after consultation with the track-coordinator from the home university.
- 3) There is a 4TU-CME study guide available at the CEM/CME Canvas page. That study guide provides all the information that a CME-student needs to know in order to find out what are the topics at the different locations, what are recommended courses, how to enrol for courses at each location and how to get into contact with the right persons.



## APPENDIX D. PROCEDURE FOR THE FINAL MASTER EXAMINATION

The full procedure is to be found in the MSc-thesis assignment student guide that is published on the CEM/CME Canvas page. The most important points are listed below:

1. The student has to make sure that an application for the final examination (colloquium) is requested with the Educational Affairs Office (BOZ) at least three weeks prior to the planned graduation date;
2. The student has to 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 the Educational Affairs Office (BOZ);
3. The student has to make sure that at least one week prior to the graduation date, the graduation report is handed in to the Educational Affairs Office (BOZ);
4. The Educational Affairs Office (BOZ) prepares the certificate and makes it available to the UT supervisor prior to the final examination;
5. Applications for the final examination in the second half of August must be submitted to the Educational Affairs Office (BOZ) three weeks prior to the date of the final examination. All the periods mentioned exclude the