

Study Charter Civil Engineering and Management

Foreword

This document is the Student Charter CEM (SS-CEM) and consists:

- Study guide
- Teaching and Examination regulations (Article 1-24)
- Programme-specific appendices
 - Programme specific appendix of the teaching and examination regulations of the master programme
 - Rules of conduct and regulations Examination Board

Both the faculty of Engineering Technology and students can find their legal rights in the SS-CEM. This is not the case for other written or electronic publications such as

- The web-site of the Civil Engineering and Management: <http://www.utwente.nl/cem>
- The course catalogue of the UT: <http://osiris.utwente.nl>
- The various manuals and brochures of Civil Engineering.

The SS-CEM is available for inspection at the Education Affairs Office of Civil Engineering (BOZ-CiT). A paper copy can be obtained on request. The SS-CEM is published on-line on the programme website, <http://www.cem.utwente.nl>.

In cases to which the SS-CEM doesn't anticipate or isn't clear, the dean respectively the Examination Board (EB) will decide depending on the powers conferred by the WHW. The dean respectively the EB informs examiner(s) and / or students about decisions.

In cases in which the application of the SS-CEM leads to clearly dishonest or unintentional situations, the dean, programme director or the Examination Board is allowed to differ from the SS-CEM if this doesn't harm the student. These kind of decisions need to be hand over motivated and in paper to the student, the dean, the programme director, the examination board and BOZ-CiT.

If in this regulation is referred to an article, it means an article in this SS_CEM. If is referred to the Court of Justice, it means the Dutch Higher Education and Research Act (WHW).

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Prof. dr. F. Eising
Dean faculty of Engineering Technology

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STUDY GUIDE CIVIL ENGINEERING AND MANAGEMENT

Practical Information

Education Organisation

Faculty Dean	Prof.dr.ir. F. Eising
Programme Director	Mrs. Dr.Ir.C.M. Dohmen-Janssen
Programme Coordinator	Mrs. Drs. L.A. Woud-van der Graaf
Academic Counsellor	Mrs. Ir. J.G. de Kiewit
Education Administration	bozcit@utwente.nl

Education Committee (OLC)

The Education Committee is responsible for monitoring and approval of the content and quality of the programmes of Civil Engineering. In the Education Committee both scientific staff and students are equally represented.

President dr.ir. P.C. Roos

The Education Administration acts as register for the Education Committee

Study Association

S.V. ConcepT (www.concept.utwente.nl)

Alumni Association

ConcreeT (www.concreeet.utwente.nl)

Facilities

1. In all communication connected to the programme as well as in all administrative procedures inter- or intranet will be used. The University of Twente is using an electronic learning environment. In setting up the CEM programme, it was assumed that students, who for the first time enrolled on the programme in the study year 2007 – 2008 or later, possess a laptop. Student can use the facilities of the Notebook Service centre (NSC) to obtain and maintain a laptop. The student can use the network and do have entrance to the inter- and intranet using the laptop.
2. Use of computer and network facilities for other purposes than study can be considered misuse.
3. Each student will be provided with an individual student email account. All electronic communication will be executed via this address.
4. The university does have lecture and practical rooms, accommodations for guided and independent self study, a library and research facilities for educational purposes. The university offers limited facilities for free computer access.
5. The programme will provide an accommodation to the study association for their activities.
6. Misuse of or damage to facilities of the University of Twente or misconduct can, next to compensation, lead to exclusion for exams.
7. Books and journals relevant to Civil Engineering are found in the Central Library of the UT. Regulations concerning quantity of books on loan, lending period and fines are determined by the University library.
8. If excursions, field work, working visits etc constitute a (more-or-less) obligatory part of a course, and if these activities do not take place within reasonable cycling distance, the faculty defrays the travelling expenses. If these activities last more than one day, appropriate lodging is provided at the expense of the faculty.

Education Systems

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

Quality Assurance

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

- Questionnaires (Inquiries) at the end of every quartile
These inquiries are taken by the partaking students at the end of every quartile for every course.
- Extensive course evaluation
The Programme Director will perform extensive course evaluations if instructed to do so by the Education Committee.
- Panel conversation
Panel conversations will be held each quartile with a selection of students who participated in the courses (B1, B2, B3, M) of that quartile.
- Data on performance and progression
Annually the Education Centre (Onderwijskundig Centrum, OC) produces standardized overviews of performance and progression.
- Performance Reviews
Results of activities stated in 1, 2 and 3 are brought to the attention of chair holders, so that they can bring these into the performance reviews with each member of staff.
- Educational professionalization
Members of staff do have to have a so-called BKO-qualification (Basis Kwalificatie Onderwijs) Thereafter members of staff are given the opportunity to follow obtain or maintain this qualification.
- Incidental activities
Where necessary, in addition to the activities mentioned above, further research is carried out (for example, research on time spent, inquiries among alumni, and the like.)

Student counseling during the master programme

Student counseling is available during the master programme. Students who do not have finished their bachelor programme yet, are tutored by the student adviser (Annet de Kiewit). Students who do have their bachelor diploma will be appointed to a tutor. The tutor is a staff member of the department of the preferred track of the student.

Each department has a tutor coordinator who will appoint the tutor:

Department Construction Management & Engineering (track CPM):

- *dr.ir R.S. de Graaf*

Centre for transport studies (track TEM)

- *prof.dr.ir. E.C. van Berkum*

Water Engineering and Management (track WEM)

- *dr.ir. D.C.M. Augustijn*

Together with the student adviser or tutor your master programme will be discussed and formally established. The tutor will approve your programme on behalf of the Examination Board. Any changes in the programme need to be discussed with and approved by your tutor.

The tutor will monitor your progress and can be consulted in case of study related problems.

The student adviser of Civil Engineering (Annet de Kiewit, HR Z-218) will support, if and when necessary, the tutors and can be consulted by master students as well.

With respect to artikel 5.4 and 5.5. of SS-CEM the following applies:

- 1 In case of a request for an exam attempt ≥ 3 (see article 8.3), exemption for entrance rules (article m and R3.2) and facilities to prevent becoming 'langstudeerder', the student adviser will give an advise about the 'studieplan'.
- 2 In all other cases the student can ask for advise from the student adviser.

When advise is mandatory (1) or wanted (2) the student has to hand in the 'studieplan' via Osiris 2 weeks prior to the start of the quartile in order to have the advise in time.

Complaints

Complaints about the (organization of the) programme can be sent to the Programme Director, the Programme coordinator or Study association ConceptT. Appeal is possible via the Objections, Appeals and Complaints Desk at Student Services (building Vrijhof)

Complaints about the (organization of) exams can be sent to the Examination Board. Appeal to decisions of the Examination Board is possible via the Objections, Appeals and Complaints Desk at Student Services (building Vrijhof)

Programme Information

Master programme in short

The master programme consists of the following:

- 11 courses of 7.5 EC to be chosen from a supply of 30 courses (total 82.5 EC).
- The course 'Master thesis preparation' of 7.5 EC and the Master thesis of 30 EC (together 37.5 EC).

The programme should comply with the following:

- it should include at least two courses of advanced level ('star courses');
- it should include at least one design course (Integral Traffic & Transport Project, Design Project Water II or Collaborative Design);

Course schedule

Course 1	Course 3	Course 5	Course 7
Course 2	Course 4	Course 6	Course 8

Course 9	Course 11	Master thesis	Master thesis
Course 10	Course "Master thesis preparation"	Master thesis	Master thesis

In the figure above the outline of a regular master programme is given. The programme and time table for 2010-2011 is published on the site:

http://www.cem.utwente.nl/master_programme/study_programme

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

Explanation:

- In each study period -called a quartile (kwartiel in Dutch)- several courses are offered. Each course will take about 20 hours per week during 10 weeks.
- Per quartile you can do two courses.
- Students who do not have their bachelor diploma or students with many extra curricular activities can do one course per quartile.
- The courses are scheduled either in the a-schedule or in the b-schedule. The a-schedule and b-schedule never overlap so you can always combine one course of the a-schedule with one course of the b-schedule.

Profiling

By choosing a certain combination of courses the student builds up his own profile. This profile can be in Water Engineering and Management, Transportation Engineering and Management or Construction Process Management. Predefined programmes for these profiles can be found in the programme file http://www.cem.utwente.nl/master_programme/study_programme

Other profiles are possible however:

- Water Management and Geoscience. The Water Engineering and Management department offers together with ITC, the International Institute for Geo-Information Science and Earth Observation (see www.itc.nl) a special programme. In this programme the student replaces a semester of courses in the WEM-track by a semester of courses at ITC. More information on this programme can be obtained via the tutor of WEM dr.ir. D.C.M. Augustijn
- Design/construction (i.e. courses Collaborative Design, Supply Chain Management and ICT, Industrialisation in Engineering & Construction, Sustainable Building, Project Control & Risk Management, Geo Risk Management, Infrastructure Management, Hydraulic Engineering)
- Modeling (i.e. courses River Dynamics, Marine Dynamics, Morphology, Planning & Sustainability, Operations & Management, Integrated Assessment, Data Analysis in WEM)
- Business administration and public administration in relation to Civil Engineering (i.e. courses Integrated Water Management, River Basin & Coastal Zone Management, Project Control & Risk Management, Process Planning, Markets, Organisation & Innovations, Industrialisation in Engineering & Construction, Land Use and Transport Interactions, Planning & Sustainability 1)

TEACHING AND EXAMINATION REGULATIONS
(under articles 7.13 and 7.59 of the Higher Education and Research Act)

Master Programme Civil Engineering and Management

The Dean of the faculty,

in view of the articles 9.5, 9.15, first paragraph under a, 7.13 first and second paragraph, 9.38, under b, and 9.18, first paragraph under a, and 7.59 of the Higher Education and Research Act (WHW), and

in due consideration of the recommendations of the Board of Studies, as well as the approval by, or advice of, the Faculty Council, pertaining to the specific appendix on the programme in question,¹

hereby authorizes the Education and Examination Regulations of the following educational programme:
Civil Engineering and Management (CEM)

¹ The advisory powers relate to article 7.13, paragraphs a to g, of the WHW. The power of approval relates to article 7.13 of the WHW, regarding the remaining paragraphs of this article.

Preamble Applicability

1. Each programme has a specific programme appendix.
2. For each programme, the general section and the specific programme appendix together form the Teaching and Examination Regulations for the applicable Bachelor's programme.
3. The general section and the specific programme appendix of the Teaching and Examination Regulations are approved by the Dean.
4. The Teaching and Examination Regulations apply to all students registered with the applicable programme.
5. A programme's Examination Board sets down the Examination Board Regulations for the execution of its tasks and powers in accordance with article 7.12b of the WHW.
6. The jurisdiction of the Examination Board of a programme extends to all units of study that are part of a student's programme.
7. The stipulations in this general section of the Teaching and Examination Regulations, in the specific programme appendix of the Teaching and Examination Regulations and in the programme Examination Board Regulations also apply to units of study provided by lecturers from other programmes or institutions.
8. An English translation of the general section and the specific programme appendices of the Teaching and Examination Regulations and the Examination Board Regulations is available for the English-language Bachelor's programmes. In conflicting situations the Dutch text shall take priority over the English text.
9. Please read all qualifications such as him, her, he and she as gender neutral.

Section 1 – General

Article 1 - Terms and Definitions

The terms and definitions described in this document are understood to have the same meaning as they have in the Higher Education and Research Act (hereinafter 'the WHW'), insofar as they occur in this act.

The following terms and definitions apply to this regulation:

Dean:	Head of the faculty.
EB:	Executive Board of the University of Twente.
EC:	European Credit (EC), a credit point of 28 hours as described in the WHW.
ECTS:	European Credits Transfer System: European agreements have been reached on a joint system for expressing student study load; the study load of an academic year is 60 European Credit points, or 1680 hours (see article 7.4 of the WHW).
Examination:	An examination is deemed successfully completed if the exams required for the units of study of a programme have been successfully taken
Examination Board:	The programme Examination Board is appointed by the Dean in accordance with article 7.12 of the WHW.
Examiner:	The individual, who, in line with article 7.12, paragraph 3 of the WHW, has been appointed to hold the exams.
Examination Programme:	The specific contents of units of study recorded in the Student Information System (SIS) that an individual student is to complete during the course of a programme, inclusive of any optional (elective) programme components
Authorized Proof of Result:	An authorized proof of result is a list or other written document initialed by or on behalf of an Examiner, or a result published via the Student Information System (SIS).
Institution:	University of Twente.
Unit of Study:	A unit of study in a programme as described in article 7.3, paragraphs 2 and 3 of the WHW, or a practical exercise.
Programme:	The Master's programme as described in the appendix to the Education and Examination Regulations.
Study Programme:	The applicable curriculum of the programme as recorded in the specific programme appendix.
Practical Exercise:	A practical exercise, as described in article 7.13 paragraph 2 under d of the WHW, is a unit of study or part of a unit of study, whereby the emphasis is placed on the student's activities, such as: <ol style="list-style-type: none">1. carrying out literature research, an assignment or a preliminary design, writing a thesis, article or 'position paper', or giving a presentation in public;2. carrying out a design or research assignment, doing tests and experiments, participating in practicals, practising skills;3. following an internship, taking part in field work or an

	excursion;
	4. participating in other educational activities deemed as necessary and aimed at achieving the required skills.
Student:	Anyone registered with a programme in accordance with article 7.34 and 7.36 of the WHW.
Student Information System (SIS):	Web application authorized by the Board of the university for registration and for providing information on all relevant data on the students and the university, as described in the WHW.
Student Counsellor:	Person appointed by the Board of the university who acts as point between the student and the university as described in article 7.34, paragraph 1 d of the WHW.
Student Adviser:	Person appointed by the Dean who acts as contact between the student and the university, and in this role represents the interests of the students, as well as fulfilling an advisory role.
Academic Year:	The term that starts on 1 September and ends on 31 August of the following year. The academic year is 60 ECs or 1680 hours.
Study Plan:	A plan prepared by the students describing their study programme itinerary.
Study Rate:	Number of ECs achieved in a certain period divided by the number of ECs that can nominally be achieved in this period.
Exam:	An evaluation of the knowledge, insight and skills of the student in relation to the unit of study, as well as the testing of these by at least one Examiner appointed by the Examination Board.
UT:	University of Twente
Working day:	Any day from Monday to Friday with the exception of official holidays and the prearranged 'bridging days' (<i>brugdagen</i>) on which the staff are free.
Act:	The Higher Education and Scientific Research Act (WHW), in the Dutch Bulletin of Acts, Orders and Decrees, number 593, and as amended since.

Article 2 - Programme Content

1. The items as described in article 7.13, paragraph 2, a till j and l, s and t of the WHW are laid out in the specific appendix of each programme.

Article 3 - Final Attainment Targets of a Programme

The goals and final attainment targets (article 7.13 paragraph 2 sub c of the WHW) are described in the specific programme appendices.

Article 4 - Admission to the Programme

Admission to the programme can be obtained by holding one of the following:

- a. A BSc degree in Civil Engineering of the University of Twente or Delft University of Technology.
- b. A Dutch BSc degree in an adjacent domain.
- c. A Dutch diploma (MSc or '*doctoraal*' diploma) in an adjacent domain.
- d. A Dutch HBO bachelor degree in Civil Engineering or adjacent domain.
- e. A Dutch HBO diploma ('*ing*') in Civil Engineering or adjacent domain.

- f. A diploma (Dutch or non-Dutch) which has been recognised by the (Dutch) Minister of Education or by the University board as being equivalent to one of the degrees mentioned in a – e above.
- g. Knowledge and skills which are acquired in another way than in formal education and which are – according to the assessment of the Programme Director equivalent to one of the degrees mentioned in a – f above.

Additional criteria with respect to admission can be found in appendix r.

Section 2 Student Supervision

Article 5 - Study Plan

1. The student is required to submit a study plan for a semester prior to the start of this semester. The deadline for submitting the study plan is communicated to the student by the Dean of the programme in due time.
2. The programme itself determines the student's study plan for the first semester of the first academic year. This study plan will comprise all units of study of the first semester of the first academic year of the programme. In exceptional situations, the student may change this study plan in consultation with the Student Adviser.
3. After the deadline as described in paragraph 1 above, second sentence, the student can change the study plan in consultation with the Student Adviser.
4. The student may receive an advice about their study plan if the Student Adviser deems this necessary.
5. The details of the method used by the Student Adviser to advise on the students' study plans will be made known by the Programme Director before the start of the academic year.

Article 6 - Student Supervision

1. The Dean is responsible for student supervision, among others to inform the student of study opportunities within and without the programme. The Dean has given a mandate to the Programme Director of the programme to execute the tasks of student supervision.
2. Each student is appointed a Student Adviser.
3. The Student Adviser supervises the student and offers advice on study-related matters, as well as personal problems if the student so desires. The Student Adviser also advises the student on facilities for specialized supervision within and without the university.
4. Not applicable
5. Not applicable
6. If a student wishes to make use of his/her right to specific supervision or facilities, they must contact the Student Adviser. The Student Adviser records the agreements with the student in the SIS, from which agreements rights may be derived.
The following applies to special facilities:
 - a. Students who fall behind in their studies through demonstrable circumstances beyond their control or personal circumstances have the right to request extra supervision or facilities.
 - b. The right to the aforementioned supervision or facilities concerns the right to additional individual student supervision. This includes dispensation from participation in programme components and/or the use of special facilities, if necessary and possible. Such dispensation and special facilities can only be granted by the Examination Board.

Article 7- Studying with a Disability

1. A disability is a protracted physical, sensory or other functional disorder that might limit the student's academic progress.
2. The extra facilities considered most effective for the student in question are discussed in an interview with the Student Adviser and/or the Student Adviser. The extra facilities are intended to safeguard the student's achievement of the final attainment targets.

3. On the basis of the interview described in paragraph 2, the student submits a written application for the facilities in consultation with the Student Adviser.
4. The application is submitted to the Dean, preferably three months before the student is to participate in classes, exams and practical exercises for which the facilities are required.
5. The application is supported by documents that can reasonably be requested in support of the application (such as a doctor's or psychologist's letter or, in case of dyslexia for example, a report by a testing bureau registered with BIF, NIB or NVO).
6. The Dean makes a decision, within 20 working days of receipt of the application, or as earlier as the urgency of the application necessitates it, on the validity of the application as described in paragraph 3, and informs the student and the Student Adviser of his/her informed decision.
7. The Student Adviser ensures that the relevant parties are informed in due time of the facilities granted to the student with a disability.
8. Should the Dean of the faculty turn down the application in full or in part, the Dean will inform the student of the justification for this rejection and the possibilities for making an objection and an appeal. An objection must be submitted in writing to the Objections, Appeals and Complaints Desk at Student Services within six weeks of notice of the decision.
9. Should extra facilities be granted, it will be stated for what term this grant will apply. The applicant and the Student Adviser will evaluate the facilities before the end of this term. During this evaluation parties will discuss the effectivity of the facilities provided and whether they should be continued.

Section 3 - Exams

Article 8 - Registration, Frequency and Periods

1. There will be an opportunity at least twice a year to sit written or oral exams. Practical exercises can be completed at least once per year.
2. There is in any case at least one opportunity to sit an exam at the end of the period in which the applicable unit of study had been taught.
3. If a student fails to achieve a mark of 6 or higher after two attempts to sit an exam for a unit of study, and the student wishes another opportunity to sit this exam, an application must be made to the Examination Board. This application must be accompanied by a plan of action, which will be drawn up by the student in consultation with the Student Adviser. The Examination Board decides whether or not to grant the application.
4. The details of the stipulation in paragraph 3 are made known by the Programme Director before the start of the academic year.
5. In contradiction with that determined in paragraph 1 of this article, an opportunity to take an exam for a unit of study that is part of the study programme, but which was not taught during that particular academic year, shall be offered at least once per academic year.
6. In certain cases the Examination Board can deviate from the number of times and the manner in which exams can be taken.
7. At least one month before the start of the semester the exam timetable for that semester is published with the dates and times of the exams.
8. The Dean must approve any changes to the exam schedule. Students will be informed of any changes. The Programme Director must inform the Examination Board of the decision to make these changes during the next exam meeting.
9. The student is required to register for exams via the SIS.

10. Should the student fail to register before the close of registration, they will lose the right to take that particular exam.
11. The student can withdraw their registration up to 24 hours prior to an exam.
12. Should a student fail to appear for an exam for which they registered via the SIS, and from which they failed to withdraw 24 hours prior to the exam, this is recorded in the SIS as a fail. This will count as an unsuccessful exam attempt as meant in article 3.

Article 8a Types of Exams and Information about the Exams

1. A unit of study is completed with an exam. An exam can comprise one of the following types:
 - a written exam;
 - an oral exam;
 - a series of tests;
 - the assessment of practical exercises as meant in article 1;
 - a combination of the above.
2. The Examination Board of the relevant programme is to publish the following programme details at least two weeks before the start of the teaching period:
 - the exam requirements (in any case which material is to be tested);
 - further information concerning the method of examination;
 - the weight of a particular exam for the final result of a series or combination of exams.
3. The information in article 2 is any case published in the electronic learning environment (Blackboard) of the unit of study in question.
4. The student has the right to view model exam questions, practice exams or representative old exams, and the relevant answers, as well as the assessment standard for the exam in question.

Article 9 - Oral Exams

1. Oral exams are not taken in public, unless the Examination Board decides otherwise due to extraordinary circumstances.
2. A student or Examiner who wishes third parties to be present during an oral exam must inform the Examination Board at least 10 working days prior to this exam.
3. If the Examination Board has determined that members of the Examination Board (or an Observer representing the Examination Board) is to be present during an oral exam, this is made known to the Examiner and the student at least one working day prior to the exam.

Article 10 - Validity of Exams

1. A successfully completed unit of study is valid for a term of six years.
2. The student can submit a request to the Examination Board to have the validity of a result as meant in paragraph 1 extended. The Examination Board may not refuse this request without a valid reason. The Examination Board will provide a written justification if it turns down this request.
3. The results of exams that are part of a series or combination of exams are valid only during the academic year in which they are achieved. The Examiner of the unit of study may determine an alternative arrangement. In this case the Examiner will inform the Examination Board. The alternative arrangement must be made known via the electronic learning environment (Blackboard).

Article 11 - Confirmation and Publication of the Results

1. The result of a written exam or practical exercise is published via the SIS within 20 working days.
2. The result of an oral exam is made known to the student within one working day in the form of an authorized proof of result provided by the Examiner.
3. The provisions of paragraph 2 do not apply if the oral exam is part of a series of oral exams of the same unit of study, which take place on more than one day. In that case, the Examiner determines the result within one working day after conclusion of the series of oral exams.
4. If the result of a unit of study is based on the completion of one or more assignments, papers or theses, then the date of submission of the final assignment, paper or thesis will count as the exam date.
5. Should the Examiner not be able to meet the term as described in paragraphs 1 and 2 due to extraordinary circumstances, they will report this with reasons to the Examination Board. The student is informed of the delay as soon as possible by the Examination Board whereby the new term within which the result will be made known is also communicated. If the Examination Board is of the opinion that the Examiner has not met their obligations, it may appoint another Examiner to ascertain the result of the exam.
6. If a second exam opportunity is planned shortly after the first, the results of the first exam will be published at least ten working days prior to the second exam.
7. The student can request a certified study progress overview from the Student Services Desk in *de Vrijhof* if required.
8. If a student receives more than one authorized result for one and the same unit of study, the highest result will apply.

Article 12 - Right of Inspection and Justification

1. The student has the right to hear a justification of the results of an exam from the Examiner. If no collective discussion of the results is held, the student may submit a request for a discussion of the results to the Examiner within two weeks of publication of the exam results. This discussion, or a collective discussion, must be held within five weeks of publication of the exam results. After this term of five weeks the student will no longer have the right to a discussion of the results of an exam and a justification of the assessment by the Examiner.
2. The Examiner responsible for the assessment of a student's written exam is also responsible for ensuring that this work is stored for at least two years, following publication of the results, in the applicable chair's or department's administration. The student has the right of access to this work during this term.
3. The Examination Board may permit deviations from the provisions of paragraphs 1 and 2.

Article 13 - Administrative Errors

If, following the publication of an exam result, a marks sheet, or an overview of a student's progress, an alleged error is discovered, the discoverer, be it the university or the student, is required to make this known to the other party immediately upon finding the error and to cooperate with rectification of the error.

Article 14 - Exemption from an Exam or Practical Exercise

1. The Examination Board can, at a student's request, grant that student exemption from an exam or practical exercise. If applicable, the Examiner in question may be consulted first.

2. The grounds under which the Examination Board can grant exemption from a specific exam pertain solely to the level, content and quality of exams or tests previously taken by the student, or knowledge, insight and skills acquired by the student outside of the sphere of university education.
3. Students may also be exempted from assignments or practical exercises by the Examination Board if they can demonstrate that a specific assignment or practical exercise, or the execution of such assignment or exercise, will likely place them before a moral dilemma. In such a case the Examination Board decides whether the practical exercise or assignment can be carried out in another manner to be determined by it.

Section 4 - Examinations

Article 15 - Flexible Programme

The Examination Board of a programme decides whether a student may follow a flexible programme as described in article 7.3c of the WHW. The Examination Board assesses whether a flexible programme is appropriate and consistent within the domain of the programme and whether the level is high enough in light of the final attainment targets of the programme.

Article 16 - Programme Examinations

1. The programme CEM has a Master's examination.
2. The Master's programme CEM has a study load of 120 ECs.

Article 17 - Periods, Frequency of Examinations and Issuing of Certificates

The procedure for the Master's examination and the issuing of the certificate is described in appendix q and examination rule R.9.

Article 18 - Degree

Participants who have successfully met all requirements for the Master's examination are awarded a Master of Science (MSc) degree.

Section 5 - Appeals and Objections

Article 19 - Individual Appeals and Objections

An appeal against a decision made by the Examination Board or an Examiner, and objections to decisions made by the Dean on the basis of these regulations, must be submitted in writing to the Objections, Appeals and Complaints Desk at Student Services within six weeks of notice of the decision.

Section 6 - Conflicts, Amendments and Implementation

Article 20 - Conflicts with these Regulations

If other additional regulations and/or provisions pertaining to education and/or examinations conflict with these Teaching and Examination Regulations, the present Teaching and Examination Regulations take precedence.

Article 21 - Amendments to the Regulations

1. Amendments to these Teaching and Examination Regulations are determined by the Dean in a separate decree.
2. In principle, 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 of the Examination Board.

Article 22 - Transitional Arrangements

1. In case of amendment of the Teaching and Examination Regulations, the Dean may decide on a transitional arrangement with a predetermined term of validity.
2. The transitional arrangement will be published on the applicable programme's website.
3. Points of departure for a transitional arrangement if a study programme is changed:
 - a) Changes to a study programme are published before the start of the academic year in which they are to apply.
 - b) No guarantee can be given that all the units of study of a programme, as these were defined upon a student's registration with a programme, will actually be taught in the study programme. The study programme as most recently approved by the Dean is taken as the basis for establishing the results of the propedeutic and Bachelor's examination.
4. These transitional arrangements shall at all events include:
 - a) which lapsed units of study are equivalent to which units of study, or parts thereof, in the changed study programme as recorded in the specific programme appendix;
 - b) that if a unit of study that does not involve a practical exercise is deleted from a programme, then students are to be given two opportunities in the following academic year to take the relevant exam, either orally or in writing, or to undergo another form of assessment;
 - c) that if a unit of study that involves practical exercises is deleted from a programme, and during that academic year no opportunities are offered to carry out these practical exercises, at least one unit of study is designated to replace the lapsed unit of study;

- d) the term of validity of the transitional arrangements.
- 5. The stipulations in article 4 of a transitional arrangement must be approved by the Examination Board.
- 6. In exceptional cases, and if this is to the student's advantage, the Examination Board may allow a deviation from the number of times and the way in which exams for a lapsed unit of study may be taken.
- 7.

Article 22a - Assessment of the Education and Examination Regulations

The Programme Director, under mandate by the Dean, is responsible for the regular review of the Teaching and Examination Regulations and takes into account the resultant study load for the students to enable this to be monitored and adjusted if necessary.

In accordance with article 9.18 of the WHW, the Board of Studies (OLC) is responsible for issuing an advice on the Teaching and Examination Regulations as well as the annual assessment of the manner in which the Teaching and Examination Regulations are executed.

Article 23 - Publication

The Teaching and Examination Regulations and the associated appendices are published via the website of the university and the programme in question.

Article 24 - Date of Commencement

- 1. The date of commencement of these regulations is 1 September 2011.

PROGRAMME SPECIFIC APPENDIX OF THE TEACHING AND EXAMINATION REGULATIONS OF THE MASTER PROGRAMME CIVIL ENGINEERING AND MANAGEMENT

The rules in this appendix are part of the programme specific part of the student charter including the teaching and examination regulations of the master programme Civil Engineering and Management (CROHO-number 60026) of the faculty Engineering Technology of the University of Twente to be called: 'OER-CEM2011'.

a. Content of the programme and the associated examinations

Aims of the programme

The programme provides academic knowledge, understanding and skills in the domain of civil engineering and certain sub-domains of business administration and public administration at a level which qualifies the graduate for independent professional practice and research in civil engineering.

Teaching methods

- **lecture:**
a plenary meeting for the students where the teacher instructs
- **study group::**
a meeting (for a subgroup of the students) where students can process the subject material
- **assignment:**
the accomplishment of a design- or research assignment.
- **practical work:**
a practical exercise as defined in article 7.13.2 item d of the law It means being part of an educational activity that is focused on achieving certain skills like making a design, doing an experiment or take place in an excursion
- **project:**
accomplish a design- or research assignment in a team of approximately 5 persons

Examination

The educational programme CEM consists the following examination:

- the final master examination

Appendix b contains rules about composing the programme.

In the overview the following abbreviations will be used:

S	written examination
T	partial written examination
WG	group assignment
WI	individual assignment
M	oral examination

For every course the following information should be accessible: a description, the manner of assessment and the composition of the end mark, the schedule of the meetings and the form of

the meetings. If it is not possible to provide this information in time via a website, the information should be given on paper or via the ELO at the start of the course.

Available Master's courses

Course code	Course	Quartile	EC	Assessment Method
195800100	Legal & governance aspects	1	7.5	S+WG
195800200	Project management	2	7.5	S+WG
195800300	Process management	2	7.5	S+WG
195800400	Collaborative design & engineering (°)	3	7.5	T+WG
195810100	Markets, organizations & innovation (*)	2	7.5	M+WG/WI
195810200	Supply chain management & ict (*)	1	7.5	T+WG
195810310	Industrialization & innovation in construction (*)	4	7.5	S+WG/WI
195810400	Sustainable building (*)	1	7.5	S+WG
195810600	Project control & risk management	3	7.5	S+WG
195820300	Geo risk management	4	7.5	WG+WI
195820400	Research methodology & academic skills	1	7.5	S+WG+WI
195820500	Infrastructure management	4	7.5	S+WG
195820600	Integrated global project management	3	7.5	WG+WI
201000095	Procurement Strategies & Tendering (*)	3	7.5	S+WG
195420800	Sustainable transport (*)	4	7.5	WG+WI
195421200	Public transport	1	7.5	S+WG
201000025	Land Use and Transport Interactions (*)	2	7.5	WG+WI
201100005	Traffic Operations	3	7.5	
201100006	Traffic Management (°)	4	7.5	
201100007	Transport Policy	1	7.5	
201100008	Transport Modelling (*)	2	7.5	
201100009	Transport Research Project	1,2,3,4	7.5	
201100010	Intelligent Transport Systems	1	7.5	
201100011	Intelligent Transport Systems Project (°)	2	7.5	
201100012	Mathematical Optimization in Transport	3	7.5	
201100013	Rail Transport (°)	3	7.5	
195400100	Hydrology	1	7.5	WG+WI
195400210	River systems	1 ²	2.5	S
195400230	Water quality	1 ³	2.5	S+WG+WI
195400240	Marine systems	1 ⁴	2.5	S+WI
195400300	Integrated water management	4	7.5	WG+WI
195400400	River dynamics	4	7.5	S (> 15)/M+WI
195400500	Design project water II (°)	2	7.5	WG+WI
195400600	Tools for water policy analysis (*)	3	7.5	S+WG
195400700	River basin & coastal zone management (*)	1	7.5	S+WG+WI
195400800	Marine dynamics	1	7.5	S+WG+WI
195400900	Mathematical physics of water systems	3	7.5	S+WI+WG
195410100	Data analysis in water engineering & management	2	7.5	S+WI
195410200	Morphology (*)	2	7.5	WG+WI
195410300	Hydraulic engineering	4	7.5	S+WG
195460600	Integrated assessment	3	7.5	WI

² Also available as self-study in Quartile 4

³ Also available as self-study in Quartile 4

⁴ Also available as self-study in Quartile 4

b. Content of the specializations offered by the programme

The programme CEM does not have formal specializations. By choosing a combination of courses the student can profile as follows:

- Construction Process Management
- Transportation Engineering and Management
- Water Engineering and Management

A programme consists at least of the following:

- 11 courses each of 7.5 EC
- 1 preparation course for the graduation project (pre-graduation course) of 7.5 EC
- the graduation project of 30 EC

Of the 11 courses, at least 10 should be chosen from the list in appendix a; if desired an eleventh course can be composed of 'loose' courses from within or outside the faculty, provided that these courses are from a master's programme and do not overlap with the other course in the programme.

The total must satisfy the following criteria:

- two courses must be at advanced level (designated with an * in the overview) and
- at least one course must have an advanced design character (designated with 'o').

Students with a previous university qualification other than BSc-Civil Engineering can replace not more than two 7.5 EC courses by education in which deficiencies can be worked off.

In consultation with the tutor each student sets up his own programme. At an intermediate time and with the approval of all parties the programme can be changed (see study guide and OER-CEM2011 paragraph 5).

c. Levels of knowledge, insight and skills that the student is expected to have achieved upon completion of the programme

1. The origin of the CEM Master's programme

The Starting point is that a Master's graduate

1. Can exercise his knowledge 'independently'
2. Has some insight into the coherence of knowledge (these two aspects together are also called 'academic level' ('academisch niveau'))
3. Can hold a social (or professional) function for which a scientific education is necessary or can be useful.
4. Is in a position to conduct social (or professional) business in a socially responsible manner.

What this means for the CEM master's graduate in concrete terms is discussed below.

The distinction is made between **general aspects** and **aspects which are specific to the profession**.

The general aspects are *not* characteristic for the professional situation, and follow from the points 1, 2 and 4 mentioned above. They will come into the picture in § 1.1. The aspects specific to the profession follow from point 3 mentioned above, and come into the picture in § 1.2.

In this respect the following meanings are understood:

- **CEM domain:** subjects which are studied, designs which must be realized or problems which must be solved, in which both civil engineering aspects and non-civil engineering aspects (public administration, business administration, economical, organizational, logistical, ecological) play a role and are taken into consideration.
- **Areas of consideration:** CEM operations in which the civil engineering aspects is limited to one of the three following areas of consideration: Water Management and Environment; Traffic and Transport; Building Technology and Building Processes.
- **Specialization:** a component subject of the area of consideration, for example ‘traffic planning’, ‘control of ground water level’, ‘building finance’.

1.1 General aspects

A. The academic level (academisch niveau)

At *academic* level in the CEM domain implies that one:

- can function well and ‘independently’ in the area of specialization;
- can in a short period of time familiarize oneself at academic level in another specialization of one’s area of consideration;
- can maintain one’s level of knowledge by independent study of the literature (or by taking part in post-academic education);
- can read critically the professional literature in international journals within his area of consideration;
- must be in a position to keep up with handbooks and general articles in the CEM domain;
- can carry out under global supervision and in a reasonable time research leading to a doctor’s title (PhD) in the CEM domain or in one of the adjacent scientific domains;
- understands the assumptions that underpin different scientific subjects and on that basis understands the possibilities, the limitations and the underlying similarities and differences of different scientific subjects.

B. Conducting business in a socially responsible manner

This implies that one:

- has insight into public relationships, structures and processes
- is ready to reflect on his own actions and to take the consequences for the results of these reflections.

1.2 Aspects which are specific to the profession.

The professional profile of the CEM master’s graduate is characterized by:

- the planning and management of the integral production process for civil engineering objects, systems and processes
as well as
- analysis of the implications of civil engineering interventions (processes or objects) on technical and non-technical system variables for the benefit of making policy
as well as
- the functional designing of solutions to infrastructural problems.

This means that he is involved in:

- preparation, planning, analysis, and evaluation of policy;
- planning and organization in preparation, implementation, management and control;
- in relation to engineering and technology, finances, economics, personnel management, internal and external relationships;
- and where necessary in an international setting.

C. Elaboration of the aspects which are specific to the profession

It must be expected from the graduate that he has sufficient background that, after a short period of familiarization – in which he can orient himself towards the substance of his task – he can function in those functions stated in § 1.2.

That means that he must satisfy a number of conditions which are essential for almost all functions:

- to control a number of basic disciplines at their application level;
- to be able to integrate aspects from different (technical and non-technical) disciplines in a meaningful way;
- to be able to work in a systematic and methodical manner;
- to be able to work well in team contexts;
- to be able to report back in an adequate manner.

Furthermore he must have made a more in-depth study of one specialization in civil engineering. This continuation of study in a specialization has the character of being busy in an 'experimental area' ('proeftuin').

There the student learns to apply the general knowledge of basic disciplines and procedures to a concrete domain: in that domain he will reach such a level that he is operationally employable. Moreover on the basis of this learning process he will be in a position to work, where necessary independently, in another specialization at operational level.

Where this operational level involves 'research', he:

- must be able to develop decision-supporting systems for policy making and implementation and the technical management of the relevant part-terrain of civil engineering.

Where this operational level involves the solution of concrete problems in practice, he:

- must be able to solve civil engineering problems (and design civil engineering systems) which involve aspects of public administration and business administration, making use of the available methods, techniques and strategies available in civil engineering, public administration and business administration (or must be able to deliver a contribution to the solution).

In both of these skills (research and solving concrete problems in practice), what exactly distinguishes the UT Master in CEM from a pure civil engineer or a pure business administrator or a pure public administrator is the taking into account in an integral manner of both technical as well as business administration and public administration aspects in the re-formulation and more detailed specification of problems.

From the concept of a CEM Master, in which three aspects are distinguished:

- Academic level,
- Conducting business in a socially responsible manner, and

- Aspects which are specific to the profession, the following essential competencies (exit qualifications) can be derived:

2. The exit qualifications of the CEM master's programme

2.1 Exit qualifications on the basis of A (*academic level*)

I Subject specific

Specialization:

- 2.1.1 To have such a thorough knowledge of the subject content, methods and techniques that one can apply these adequately in the handling of problems and, where necessary, one can develop new knowledge.
- 2.1.2 To be able to understand professional literature that is pushing back frontiers, to be able to make critical evaluations, and to be able to find connections for further development or application.
- 2.1.3 To know one's way in the customary literature of the given part of the domain that one can independently keep up to date and can expand one's knowledge.

Area of consideration

- 2.1.4 To have a good oversight of those specializations which occur within the area of consideration.
- 2.1.5 To have sufficient insight into each of these specializations concerning the subject content, methods and techniques in order to be able to consult productively the international professional literature in that domain.
- 2.1.6 To be able to assess which knowledge and methods in the specializations are useable in a given situation.

Civil engineering

- 2.1.7 To have sufficient knowledge and insight in order to be able to consult productively professional textbooks and review literature.
- 2.1.8 To have sufficient knowledge and insight in order to be able to exchange ideas at professional level with specialists from areas of consideration other than one's own.

Mathematics/physics/ technical business administration/public administration/informatics:

- 2.1.9 To have an operational command of the concepts and techniques at the levels described above in so far as they are used.
- 2.1.10 To have sufficient knowledge and insight in the fundamentals of these bodies of knowledge in order to be able independently to master new concepts and techniques.

2.1.11 To be sufficiently informed of the scope of the different part-domains of these bodies of knowledge in order to be able to assess whether these could be relevant in the context of a concrete problem.

Other bodies of knowledge in one – non-technical – domain of knowledge:

2.1.12 To have a global overview of the content and structure of that domain of knowledge.

2.1.13 To have sufficient insight into the subject content, methods and techniques in order to be able to consult productively professional text books and review literature.

II Not subject-specific

2.1.14 To be able to master existing knowledge efficiently by self-study.

2.1.15 To realize that the available knowledge and skills are limited and partly subject to becoming out-of-date. On the basis of this realization to make it a custom continuously to be aware of new developments.

2.1.16 To be able to acquire new knowledge by research:

- to formulate a problem statement or make a hypothesis based on a quantity of information in the form of raw data or based on professional literature.
- to analyze complex problems and to be aware of analogies between problems.
- to draft a plan of work for obtaining information and for testing a hypothesis; to assess the feasibility of that plan of work and to take the necessary organizational actions for implementation.
- to implement the abovementioned plan of work or, under his guidance, to have it implemented
- to assess to what extent the results of a particular experiment confirm the hypothesis. For that purpose to summarize, analyze and structure the results
- to assess which conclusions can be drawn from the research results and to what extent these can be generalized.

2.1.17 To be able to communicate with others in the subject domain

- to be able to make a presentation about an independently studied subject
- to write a report about a subject which has been studied, or about research undertaken or operations which have been implemented, bearing in mind the level and point of view of the reader
- to take part productively in scientific discussions about a professional subject
- to be able to handle positively oral or written contributions from others.

2.1.18 To have the attitude to evaluate critically one's own thinking and conduct, to be prepared and able to defend one's responsibility, and to be able to handle creatively any related criticisms.

2.2 Exit qualifications on the basis of B. (conduct public business in a socially responsible manner)

- 2.2.1 To be aware of the basic principles of the economic and social sciences in order to be able to make an estimate of the societal implications of one's own work.
- 2.2.2 To be able to test the societal consequences of one's own work in a rational manner in the context of ethical principles and/or political goals and starting principles.

2.3 Exit qualifications on the basis of C. (exercising the profession)

2.3.1 Modelling

General:

2.3.1.0 To provide qualitatively and quantitatively a systematic and functional overview of a part of the reality.

Specific:

a. monodisciplinary

2.3.1.1 To be able to describe qualitatively civil engineering processes and objects in terms of (for example physical or chemical) basic principles. In one's own area of consideration: where necessary and possible, to be able to quantify this description in terms of mathematical relationships.

2.3.1.2 To be able to describe systematically the infrastructure from the perspective of one's own area of consideration (GIS, key indicators, relevant categories).

2.3.1.3 To be able to describe systematically societal systems from different points of view (financial, organizational and public administrative 'bestuurskundig'). Thus to know the characteristic methods of description for these points of view and to be able to adapt them.

b. interdisciplinary

2.3.1.4 Within one's own area of consideration to be able to describe, in qualitative and where necessary and possible in quantitative terms, the interactions between civil engineering systems, societal systems and infrastructure.

2.3.1.5 To be able to describe the influence of public administrative and business administrative actions on infrastructure and societal systems.

2.3.2 Integrated design (of products, processes, structures)

2.3.2.1 Within one's own area of consideration to be able to follow an integrated design process (primarily concerned with the programme development sequence) and within that to be able to make the following contribution:

- to be able to determine the aims of a commissioning party in terms of a programme of requirements
- to be able to assess a programme for its completeness and correctness
- from the functional programme of requirements to be able to give form to a technical programme of requirements based on one's own specialism
- from the functional programme of requirements to be able to generate alternative solutions
- to be able to provide an overview of decision paths for alternatives and to follow (criteria and related decision rules) from different points of view (functionality, income and expenditure, management and legal consequences, etc.)

- in a position to select the most suitable alternatives and to know how these alternatives can be worked out to become objects

2.3.2.2 In the domain of one's own specialism to be able to evaluate a (constructed) design

- to be able to analyze a design in terms of functions, tasks of functional (sub-)systems or elements, properties, structure and layout
- to be able to identify the consequences of choices made in the design (consequences for functionality, income and expenditure, etc.)
- to be able to balance the identified consequences against a received or self-developed decision path.

The above exit qualifications have to do with subject-specific expertise: and even if it is not specifically mentioned, after each exit qualification should be read 'in the domain of civil engineering, or public administration and the like'). On the other hand many of the exit qualifications given above can also be formulated, changing things that have to be changed, for other programmes.

In addition to the above mentioned subject-specific exit qualifications, a number of exit qualifications can be formulated which relate to functioning in a professional capacity but which are not subject-specific.

2.3.3 non-subject-specific aspects

2.3.3.1 To be able to manage a process or project

- on the basis of a commission to break down a project into phases in a meaningful manner, and for each of the phases to be able to indicate the nature of the operations, intermediate products and decision moments. To be able to identify the critical moments in this plan.
- to be able to indicate in what sense and at which moments external organizations must be involved in the process (in connection with permits, policy decisions, etc.)
- to be able to construct an estimate of costs in terms of the necessary time, necessary expertise and necessary means
- to be able to monitor systematically the progress and mutual balancing of project operations
- to assess, or allow assessment of, the intermediate products of the design process against their functionality
- to monitor on time the progress of the different decision-forming processes
- to control the expenses and time allocations
- to ensure efficient reporting within the project and an adequate reporting of progress to the project commissioner.

2.3.3.2 To be able to collaborate with project commissioners, colleagues and representatives of other subject disciplines.

d. Structure of practical exercises

The educational programme Civil Engineering and Management consists a number of practical exercises in the form of design projects. Practical exercises can also be a part of a course which is completed with a written exam. More information about these practical exercises can be found in appendix a.

For the accomplishment of the master thesis, there is a guide available. Appendix q includes a more specific regulation regarding the masterthesis

Usually the opportunity to participate in a project or practical is offered only once per year. If – for reasons beyond his control – a student has not been able to participate in a project or practical in accordance with the regular schedule, the Examination Board will try – to the best of its ability – to enable the student still to carry out the project or practical.

e. Study load of the programme and each of the programme's units of study

1. The study load of the educational programme Civil Engineering and Management encompasses 120 EC.
2. The study load of each of the courses is listed in appendix a.

f. Additional regulations as described in article 7.8b, sixth paragraph en 7.9, fifth paragraph WHW

Not applicable for the study programme CEM

g. Master programmes 7.4a, eighth paragraph

Not applicable for the study programme CEM

h. Sequence of the exams

For the total number of exams and periods, see SS-CEM2011 article 8 and appendix a.

In addition to / contrary to these rules applies:

- For the scheduling of written exams of courses from the programme CEM applies: once in the last week of the quartile in which the course is offered and a second time in the exam period in August.
- Where a course is not examined in the form of a formally scheduled exam, the teacher determines the date and time when the exam can be taken before the beginning of the course. In such cases the exam can only be taken once a year.

Towards the sequence of exams and practical exercises applies that the educational programme distinguishes the following types of prior knowledge.

- **Essential prior knowledge**
The student is expected to be familiar with of the mentioned course or the concepts and the subject material of a similar course.
- **Necessary prior knowledge**
The student is expected to have participated and completed the mentioned course or a similar course. The instructor expects the knowledge of the mentioned course as known.
- **Compulsory prior knowledge**
The student is expected to have participated and completed the mentioned course or a similar course (to be stated by the examination board) before participating in the course. The examination board will check (or let check) this prior knowledge.

For more information about sequence, see appendix m

i. Nature of the programme

CEM is offered only as a full-time programme

j. Periods + frequency of examinations and exams

See appendix a.

k. Validity of completed examinations

See OER-CEM 2011 article 10.

l. Assessment Methods

See appendix a

m. Sequence demands

1. A subject to which practical exercises or projects are attached can only be completed after these exercises or projects are completed
2. Apart from the exceptions covered in articles m3, m4 and m5, the exams and final examination can only be taken by holders of the BSc degree
3. The Examination Board may exempt students from the application of article m2 if this should cause disproportionate disadvantage. Prior to such a decision the Board will consult the student adviser.
4. Students who are registered for the BSc programme in Civil Engineering, and who do not miss more than two courses of the BSc programme, are automatically exempted from the application of article m2. This exemption is applicable for an unbroken period of not more than 4 quartiles.
5. HBO lateral entrants who are registered as a premaster student are allowed to join MSc-courses as soon as they have completed the premaster course
6. Students with exemptions based on m3, m4 and m5 are not allowed to start with the course: "preparation master thesis".

For information about requesting possibly exemptions, see Rules of Conduct and Regulations Examination Board Civil Engineering and Management RR article 3.2.

n. Demands for the optional units of study and the choices that must be made

For the demands regarding the composition of the programme, see appendix b.

If a student replaces more than one course (7.5 EC) with a course / courses outside the offer of the programme, it is a free programme (see OER-CEM 2011 article 15)

o. Transitional arrangements

1. Towards the programmes of students of generation 2001-2009 the programmes written in SS-CEM 2001 – SS-CEM2009 apply inclusive possibly transitional arrangements
2. If rules regarding the composition of an exam based on partial exams, the calculation of the final mark based on partial exams, the minimum mark for completing a partial exam and / or the period of validity change, the student who completed partial exams in the year before the change, has a right to apply the rules and regulations of the year in which the results are gained

3. In case of a huge change of a unit of study (over 50%), the student who has at least once participated in an exam of the unit of study, has the right to retake the exam the next two scheduled moments in the old form. In this case the student needs to inform the instructor at least 20 working days before the exam date that this right will be used. Students need to be informed about a change and about this regulation.
4. Replacing stable units of study

Old unit of study	New unit of study	Final exam old unit of study
195460900 General Design Project	195400500 Design Project Water II	not applicable
195440300 Planning and Development	20100095 Procurement Strategies & Tendering	To be arranged with the examiner
195420110 Operations & Management I	201100005 Traffic Operations	not applicable (change of the name)
195420120 Operations & Management II	201100006 Traffic Management	not applicable (change of the name)
195420210 Planning & Sustainability I	201100007 Transport Policy	not applicable (change of the name)
195420220 Planning & Sustainability II	201100008 Transport Modelling	not applicable (change of the name)
195420300 Integral Traffic and Transport Project	201100009 Transport Research Project	not applicable (change of the name)
195420610 Intelligent Transport Systems I	201100010 Intelligent Transport Systems	not applicable (change of the name)
195420620 Intelligent Transport Systems II	201100011 Intelligent Transport Systems Project	not applicable (change of the name)
195420900 Mathematical Tools for Transport Engineering	201100012 Mathematical Optimization in Transport	not applicable (change of the name)
1922000100 Premaster course CE&M	201100017 Beleid 201100020 Recht 201100018 Economie 201100019 Management 201100021 Schrijven van een onderzoeksplan	Not applicable (administrative split)

5. If the status of a course (*) or (°) changes, the status in recorded in the examination programme of the student, is valid.
6. If a programme of a student due to rounding off or transitional arrangements consists of a total amount of EC's that is not exact the formal study load of the in this appendix mentioned programmes or units of study, such a programme is nevertheless valued with the formal study load of the programme or unit of study

p. Language

- 1 The language of instruction in the CEM programme is English. Whenever only Dutch speaking persons are involved, Dutch may also be used.
- 2 The language of the study materials depends on the instruction language (see p1). If the instruction language is English, all study materials must be in English. If the instruction language is Dutch, Dutch texts may be used if required. With mutual consent between the examiner and the examinee, the exam can take place in a language which is different from the language of instruction.
3. Papers and reports must be written in the language of instruction unless there is mutual consent between examiner and examinee to use another language. In such a case the deviation from the norm should be recorded in writing at the start of the assignment.

q. Detailed regulation Graduation project

A. General regulation

1 Definitions and Concepts

- 1.1 In total, the graduation period consists of 37.5 EC and consists of a pre-graduation course (7.5 EC) and the graduation project (30 EC)
- 1.2 The graduation teacher is a member of the scientific (academic) staff of Civil Engineering, preferably a professor or an associate professor, who is responsible for the supervision during the graduation period. The graduation supervisor is a staff member or PhD student of the UT who functions as 'day-to-day' supervisor for the graduation project in the case where the graduation teacher does not handle this task himself.

2 Requirements for the preparation block and the graduation project

- 2.1 The purpose of the pre-graduation course is to prepare the student for carrying out the graduation project. The result of this pre-graduation course is a sharpened up statement of the problem and a plan of approach for the graduation project.
- 2.2 The pre-graduation course consists of selected courses and/or an independent literature study in relation to the graduation project
- 2.3 The graduation project must fall within the domain of one of the main streams of the programme and can be carried out within one of the chairs of Civil Engineering or at an external organization.

3 Supervision and assessment

- 3.1 At the beginning of the graduation period and in consultation with his tutor or the graduation coordinator of the department, the student chooses a graduation teacher. The graduation teacher is responsible for the content of the pre-graduation course, the quality of the project, an adequate supervision and monitoring of progress, and for an adequate assessment of the final report. He is also charged with constituting the graduation committee described in article Where necessary the graduation teacher appoints a graduation supervisor for the graduation project. The graduation teacher is himself responsible for the supervision during the pre-graduation course.
When the graduation project is carried out externally, the graduation teacher also ensures that a named person from the company or organization is charged with the in-company supervision of the graduation student.

3.2 Under the chairmanship of the graduation teacher, the graduation committee determines the final assessment of the graduation project. In this external members have only an advisory role.

3.3 The following sit in the graduation committee:

- a. the graduation teacher
- b. the graduation supervisor named in article 3.1
- c. a second staff member of the UT, if the graduation teacher is also the graduation supervisor.
- d. for an external project the person within the company or organization who is charged with the supervision of the graduating student. This person has an advisory role in the determination of the final assessment.

When the nature of the project justifies it, the graduation teacher can extend the committee with appropriate experts.

4 When can the graduation project be started?

4.1 The student can begin the pre-graduation course when all but a maximum of 7.5 EC of the other components of the Master's programme have been rounded off.

4.2 The student can only begin the graduation project when the pre-graduation course has been rounded off.

4.3 The graduation teacher can deviate from the limitation stated in 4.1 if this limitation might mean that the student becomes stranded. For this purpose he seeks advice from the study adviser of Civil Engineering.

5 Monitoring the length and duration of the graduation period

5.1 At the start of the pre-graduation course, the planned finishing date is determined.

At the beginning of the graduation project, agreements are made at least about the nature of the project, about the date when the graduation project is to begin or has begun, the manner of supervision, and about the date on which the final report must be handed in.

5.2 The duration of the pre-graduation course is consistent with a study load of 7.5 EC, to be extended as the occasion arises by the time necessary for rounding off other remaining examinations or to bring the extent of the master's programme up to 120 EC.

The duration of the graduation project is consistent with the prescribed 30 EC, to be extended as the occasion requires by the time necessary to round off other remaining examinations or to bring the total of the master's programme up to 120 EC or to include the time the student wishes to add where appropriate to the graduation project.

5.3 The agreements made in articles 5.1 and 5.2 are confirmed in writing before or at the starting date of the graduation project.

5.4 In the course of the graduation period, desired adaptations to the description of the graduation project (in particular the problem statement and the resulting increase in activities for the student) are only made in consultation with the student, bearing in mind the possible (financial) consequences this has for the student in relation to his total term of residence and the finite provisions in the area of student finance.

5.5 Both the graduation teacher and the graduation supervisor jointly have responsibility for an explicit monitoring of progress during the graduation period.

5.6 On the agreed date the graduation report is placed before the graduation committee for assessment.

When the graduation report is approved, the graduation committee provides a statement on the basis of which the student can apply to take the final examination.

When the graduation report is not (yet) approved, the graduation committee clearly states

which additions and/or changes are required in the graduation work or the graduation report. Also a new date is determined, on which the revised graduation report must be handed in. Where necessary this procedure is repeated.

6 Joint graduation

The basic principle is that a graduation project is carried out individually and independently. Joint graduation is however possible. For this purpose the independent carrying out of the project is handled as follows:

a. The student graduates on an individual basis, that is to say in a (part-) project with its own problem question and responsibility.

b. Graduation is based on an individual report and an individual presentation.

Where the (external) project commissioner only attaches importance to a joint final product, then the handing in of two separate reports is the own responsibility of the students involved.

7 Deviation from this regulation

Deviations from this regulation are possible when the graduation teacher and the graduating student agree about it. These deviations are also confirmed in writing. By considerable deviations, the Examination Board should also add its own approval.

B. Procedure at the start and during the graduation period.

1. At the start of the graduation period, the student collects a 'graduation form' from the Education Affairs Office (BOZ). The Education Affairs Office checks the results which the student has obtained and enters on the graduation form which courses are still open and whether the start of the graduation period is agreed. Where the student has more than 7.5 EC of open courses, he should make an agreement with the student adviser about how graduation and catching up on courses will be combined.
2. The student makes further agreements with the graduation teacher in as much detail as possible about:
 - filling in the pre-graduation course;
 - the nature and description of the project;
 - the confidentiality of the graduation report or parts of it;
 - the phasing of the operations, according to both content and timings
 - the manner of supervision;
 - the date of the next formal progress discussion.
 - the date for handing in the graduation report;
 - where relevant: the progress of the graduation project during the summer months and the completion before 1 September, in which the student should take account that members of the graduation committee will be absent for several weeks (especially in the months of July and August) because of vacation leaveThese agreements are agreed in writing on the graduation form.
3. After rounding off the pre-graduation course, the graduation form is handed in to the Education Affairs Office (BOZ).
4. The Education Affairs Office sends the form to the Examination Board for approval. If within three weeks the examination board has not indicated to the contrary, it is assumed to have approved the nature of the project and the composition of the graduation committee.
5. After the Examination Board has approved it, the original graduation form is archived by the Education Affairs Committee. If so wished, the student can make a copy of it.

6. Before formal progress discussions take place, the original graduation form is retrieved from the Education Affairs Office, and after the discussions – after making changes where applicable – and in any case providing an appointment for the following progress discussion, it is handed in again to the Education Affairs Office.
7. When the graduation committee has approved the graduation report and the graduation presentation⁵ can be requested, this is annotated on the graduation form, together with the signature of the graduation teacher or his substitute.

C. Procedure for taking the final examination

The starting point is the normal situation where the graduation presentation and the degree award occur together and that there is no question of the designation 'with distinction'.

1. The student records with the graduation teacher a date for the graduation presentation and the award of the diploma associated with the final examination.
Associated with this, it must be borne in mind that:
 - a request for the final examination must be made to the Education Affairs Office at the latest three weeks before the planned graduation date;
 - the marks for all exams of the programme (excluding that for the graduation project) must be handed in to the Education Affairs Office at the latest three weeks before the graduation date.
 - the graduation report must be handed in to the Education Affairs Office at the latest one week before the graduation date.
2. At the latest three weeks before the planned graduation date, the student requests the final examination at the Education Affairs Office, using the relevant part of the graduation form.
3. The Education Affairs Office arranges a room for the graduation presentation and publishes the event.
4. Thereafter the Education Affairs Office sends as soon as possible an overview of the marks obtained.
5. The student checks these data and has up to one week before the graduation presentation to make corrections on the basis of original written evidence.
6. The Education Affairs Office prepares the diploma and gives it to the chairman of the graduation committee before the graduation presentation.
7. After the graduation presentation, the graduation committee determines the mark for the graduation report and gives that mark to the Education Affairs Office. Thereafter – if the final mark is 6 or higher – the chairman of the graduation committee hands over the diploma which relates to the final examination. Thereafter the Education Affairs Office ensures that the student receives a marks list (including the final mark for the graduation project).

N.B.

1. Requests to take the final examination in the second half of August must be handed in to the Education Affairs Office at the latest five weeks beforehand.
2. All the time periods stated in this Appendix are exclusive of the vacation periods announced in the year timetable.

⁵ The graduation presentation is often also called the 'colloquium'

r. Detailed regulation admission

Detailed regulation admission

- Persons, who comply with OER-CEM2011 paragraph 4.1, are unconditionally admissible to the CEM programme.
- In all other cases, a positive decision of the Admission Committee is needed. The Admission Committee takes a positive decision in the following cases:
 - a. For holders of a BSc degree: the amount of deficiencies is estimated to be less than 15 EC. This estimation is carried out by the tutor for every person individually, taking into consideration the content of the previous BSc degree programme and the specifically intended content of the master's programme.
 - b. For holders of a HBO bachelor degree: the pre-master's programme has been successfully completed. The pre-master's programme includes 30 EC and consists of the HBO pre-master's course (15 EC) and some additional courses depending on the specifically intended content of the master's programme. A specification and further regulations for the pre-master's programme is given in Appendix s.
 - c. For holders of a non-Dutch BSc degree: sufficient mastery of the English language must be guaranteed⁶.
- The HBO pre-master's course can be taken either as part of a HBO programme or during the first semester at the UT. For further regulations see appendix s. The pre-master's course examination can only be taken once.
- For students who enter the CEM programme at the start of the fall semester, or at the start of the spring semester, at least one version of the programme can be offered which can be finished within 24 months.
- In April every year (X) the dean decides on a list of UT bachelor degrees which gives admission to the CEM programme. There may be restrictions on the admissions. This list is valid until the start of the CEM programme in the academic year X+2 to X+3. This list is given in appendix t.

Admission Procedure

- Prospective students must apply for admission to the Admission Committee. Persons who are not registered as students of the UT should make use of the web-based procedure on: <http://graduate.utwente.nl>. Bachelor students of the UT programme in Civil Engineering do not need to apply for admission, provided they hold the BSc degree at the moment they enroll in the CEM programme⁷.
The Admission Committee assesses the admissibility of the applicants and reports the result of the assessment by letter.
- If the prospective student is considered to be admissible, a tutor is appointed with whom the student makes arrangements about the specific study programme. These arrangements refer at least to the courses to be followed and – in case of deficiencies – how they will be remedied.
- The arrangements made by a tutor on behalf of the Programme Director are binding, and can be changed only in case of mutual consent.
- The interested party can appeal (see article 19).

⁶ International English Language Testing System; score ≥ 6.5 .

⁷ For the procedure for release from this condition, see RR3.2 and article m of this appendix

s. Setting up the premaster programmes

Concepts

Lateral entrant (zij-instromer):	a student who enters the Master's programme from other than the UT BSc-Civil Engineering programme.
Pre-master's programme:	a programme which lateral entrants must round off before they can be admitted to the Master's programme in CEM.
Deficiency:	a shortfall in the previous education as determined by the tutor on behalf of the examination board which, without having remedied it, the student is regarded as not being in a position to round off the CEM programme satisfactorily in two years.
HBO pre-master's course	a set of social science courses for HBO graduates which is essential for being able to follow the Master's programme in CEM. This pre-master's course is a part of the pre-master's programme.

For HBO lateral entrants (zij-instromers)

1. For HBO lateral entrants the pre-master's programme consists of
 - the HBO pre-master's course (15 EC)
 - some regular courses from the Civil Engineering programme (about 15 EC)
2. The student is only admissible to the master's programme if the pre-master's course is completed in one semester and if there has been at least serious attempt to complete the other courses
3. The student is only admissible to the master's programme if the pre-master's programme totally is completed within 1,5 year

The HBO pre-master's course

4. The purpose of the HBO pre-master's course is:
 - to bring prior knowledge in the domain of several social science courses up to the level necessary for the CEM programme;
 - to test candidates on their suitability for the CEM programme
5. The HBO pre-master's course consists of the following parts
 - 201100017 Policy pre-master CEM/CME
 - 201100018 Economics pre-master CEM/CME
 - 201100019 Management pre-master CEM/CME
 - 201100020 Law pre-master CEM/CME
 - 201100021 Writing research proposal pre-master CEM/CME
6. In each of these courses one can take the examination once only. If, however, one has gained for one examination a mark of 4 or 5, one can take a repeat examination within three weeks. This opportunity can in total only be used once.
7. One can take part in the HBO pre-master's course once only.
8. The HBO pre-master's course is offered at the UT in the first semester, and can be combined with other parts of the pre-master's programme to achieve a semester with a good 'feasibility' (studeerbaarheid).
9. In deviation from what is stated in point 8, the HBO pre-master's course can also be incorporated in the programme of the HBO programme. In that case, additional rules can be

determined by the Civil Engineering examination board. In every case article 7 of this regulation applies.

The other components of the pre-master's programme

10. In addition to the HBO pre-master's course, HBO lateral entrants – depending on the planned content of their master's programme – must take the following courses in the pre-master's programme:

	CEM Building	CEM Traffic	CEM Water
HBO Civil	191512170 Mathematics B 4EC** 195820400 Research Methodology and Academic Skills 7.5 EC 192200020 Discursive skills 3.5 EC	191512220 Mathematics C 4EC** 191512170 Mathematics B 4 EC** 192220600 Traffic and Transportation (voor zij-instromers) 7.5 EC	191512220 Mathematics C 4EC** 191512170 Mathematics B 4 EC** 195400230 Water Quality 2.5 EC* 195400240 Marine Systems 2.5 EC* 195400210 River Systems 2.5 EC*
HBO architecture	191512170 Mathematics B 4EC** 195820400 Research Methodology and Academic Skills 7.5 EC 192200020 Discursive Skills 3.5 EC		

* In accordance with paragraph R9.6 this course cannot be a part of the master's programme.

** The starting point is that students master mathematics at the level of Mathematics A. There is available a self-study programme which the student must have studied before lectures begin.

11. What is determined in points 4 and 5 is not applicable to this part of the pre-master's programme.

For university lateral entrants (zij-instromers)

12. University lateral entrants who have at most 15 EC deficiencies are directly admitted to the master's programme and can remedy these deficiencies within the CEM master's programme.

13. University lateral entrants with more than 15 EC deficiencies are not admitted to the CEM programme.

Final provision

14. Where, in the judgment of the Examination Board, there are special circumstances, it can – in favor of the student – deviate from the conditions outlined above.

t. Admissions list for UT Bachelor programmes and master's programme - Civil Engineering and Management

For entry to the CEM master's programme up to and including the academic year 2010-2011, the following BSc degrees of the University of Twente give admission to the CEM master's programme:

Advanced Technology	restriction (1)
Civil Engineering	no restrictions
Technical Business Administration	restriction (2)
Technical Physics	restriction (1)
Applied Mathematics	restriction (1)
Mechanical Engineering	restriction (1)

Restrictions:

1. A maximum of 15 EC deficiencies to be remedied (depending on the precise content of the BSc) can be built into the MSc programme
2. Only the graduation specialization Construction Process Management.

u. Further terms and definitions

BOZ-CiT	Educational Affairs Office of the Civil engineering programmes (Bureau Onderwijszaken CiT)
CiT:	cluster Civil Engineering of the faculty Engineering Technology (CTW)
deficiency:	an insufficiency of knowledge or skills which hampers an acceptable progress in the CEM programmed. Deficiencies are diagnosed by the tutor on behalf of the examination board
ELO:	Electronic Learning Environment: website to support education activities for a specific course or examination (Blackboard)
Faculty	The faculty of Engineering Technology of the University of Twente. (CTW: <i>Construerende Technische Wetenschappen</i>).
HBO-premaster course	a bridging course for HBO bachelors on certain non-technical topics which are necessary entrance requirements for the CEM programme. This course is part of the pre-master's programme for HBO bachelors. [HBO = Hoger Beroeps Onderwijs, [Dutch] university of professional education].
Institutional board	board as indicated in the law. The institutional board is represented by the Programme Director within the framework of this statute.
Programme Director	the Programme Director of the Civil Engineering programmes
pre-masterprogramma:	a bridging programme which is obligatory for certain applicants to be admissible to the CEM programme
summer-course:	voluntarily bridging course that can be advised in relation to get the knowledge of mathematics at the desired level
website:	the website: www.cem.utwente.nl
lateral entrant	a person entering the CEM programme is taken directly before the programme CEM for lateral entrants to bring their knowledge of mathematics to the required level (Wiskunde A 191512120).

Admission Committee: commission consisting of the Programme Director the chairman of the Examination Board and the coordinator international affairs. The committee is responsible for handling all admission requests from lateral entrants

tutor: member of the scientific staff, responsible for the determination of deficiencies and the counseling of the student. The tutor has the role of study based on a degree other than a BSc in Civil Engineering.

RULES OF CONDUCT AND REGULATIONS EXAMINATION BOARD CIVIL ENGINEERING AND MANAGEMENT

R1 The Examination Board

- R1.1 The Dean of the faculty appoints an Examination Board in order to administer the Master's examinations and to organize and coordinate the exams in the Master's programme. The composition of the Examination Board can be found in appendix RB2.
- R1.2 The authority of the Examination Board embraces all the units of study in the student's programme.
- R1.3 The Examination Board is made up of at least three members, of which at least two are Professors.
- R1.4 The Examination Board is made up of staff members who teach in the applicable programme.
- R1.5 The managing committee of the Examination Board is formed by the chairman and the secretary.
- R1.6 The Examination Board may call on the assistance of programme staff members such as the Programme Director, the Programme Coordinator, the Student Adviser and/or the Mentors. They have an advisory voice in the Board meetings. The Examination Board can decide to mandate its powers of authority to the Chair or Secretary and the execution thereof to the Programme Board, insofar as the WHW and these regulations do not dictate otherwise.
- R1.7 The meetings of the Examination Board as well as the managing committee take place in closed session.
- R1.8 In case of implementation of decisions, 'managing committee' can be read where it states 'Examination Board'.
- R1.9 When a member of the Examination Board is unable to attend an Examination Board meeting, he may send a substitute. The substitute must introduce himself to the chairman at the start of the meeting. The substitute has the voting right of the person for whom he substitutes. However, per substitute only one vote can be given.
- R1.10 The dean appoints a chairman for a period of two years. The Examination Board can nominate a vice-chairman from its membership who can replace the chairman at all times.
- R1.11 In those cases which relate to examinations and the assessment of examination components which are not covered by this regulation, the Examination Board makes a decision. In urgent cases the management committee of the Examination Board makes a decision.

R2 Authority to hold examinations

- R2.1 In general, the person responsible for teaching the unit of study is also responsible for assessing the results. The Examination Board uses the following criteria:

- a permanent and temporary UT staff (Assistant Professors, Associate Professors, Full Professors, Lecturers), who have the requisite teaching qualifications and who are involved with the programme, are authorized to hold examinations;
 - b this authority is limited to the domain within which the staff member in question is a recognized expert;
 - c staff members of partner universities are authorized if they meet the aforementioned requirements;
 - d in all other cases the Examination Board decides whether authority to hold examinations is granted. This decision will explicitly include the term of validity and the field of study to which the authority applies.
- R2.2 For each unit of study the Examination Board appoints one or more Examiners for holding exams. If more than one Examiner is appointed for a unit of study then one of these is appointed as 'Responsible Examiner'.
- R2.3 In case the Examination Board does not appoint an Examiner explicitly, it assumed that the staff member in charge of the unit of study is the Examiner.
- R2.4 A Graduation Committee is appointed to assess the final unit of study for the Master's programme. The committee members must be approved by the Examination Board. The rules for the composition of the Graduation Committee are described in appendix q.

R3 Starting points of the Examination Board

- R3.1 The nominal schedule of the degree programme forms the basis for all organizational matters pertaining to the study programmes. The examination regulations stimulate cohort studying and aim to prevent students falling behind, thereby disrupting the programmatic sequence of the curriculum.
- R3.2 The Examination Board can deviate from the Teaching and Examination Regulations in a number of situations where these Teaching and Examination Regulations explicitly authorize this.
The Examination Board asks Student Advisers for advice before taking decisions that affect individual students. Information provided by the student to this end will be treated as confidential. The study plan and common reasons for students' falling behind are taken into account.
- R3.3 The following applies to the situations as meant in paragraph 2:
- a In the case of students who are considered likely to be successful (study rate of at least 0.8), the Examination Board will consider whether a decision will affect the student's chance of completing the Master's programme within 2.5 years.
 - b If a student is considered to be seriously trailing behind (study rate between 0.6 and 0.8), the Examination Board will consider whether there are sufficient grounds to presuppose that, on the basis of the study plan and the most recent results, a decision will help to ensure that the study rate does not drop any further;

R4 Exam structure and assessment method

- R4.1 Every exam consists of an inquiry into the knowledge, the insight and/or the skills of the student as well as the assessment of the result of that inquiry.

- R4.2 The questions and examination scripts for an exam do not go outside the learning objectives. These learning objectives are published in outline before the teaching begins, in preparation for the relevant examination component. At the start of the relevant course, the definite extent and content of the material must be published, and the written study materials must be available to the students.
- R4.3 The Examiner will send a copy of the exam and maximum achievable points to the Programme Director before the exam.
- R4.4 The rules for assessing the individual units of study are described in appendix a of OER-CEM2011.
- R4.5 The Examination Board can allow the exam to be taken in another manner than described in the first paragraph at the student's request.
- R4.6 The Examination Board will assess the quality of the exam in case the evaluation results give reason to do so.
- R4.7 In case an example or old exam is not available the Examiner should make available a representative set of questions including maximum achievable points.
- R4.8 When the examination of a unit of study takes place in components, this is announced ultimately at the start of the unit of study. The Examiner will indicate for each component its share and the way the final result is calculated from the partial results.

R5 Written and oral exams

- R5.1 A written exam has a duration of at most 3.5 hours. An individual oral exam has a duration of at most 1.5 hours. A group oral exam has a duration of at most 4 hours.
- R5.2 Written exams are assessed on the basis of predefined standards for the various questions or sub-questions of the exam.
- R5.3 The maximum achievable number of points for each question is made known to the students by recording this next to the question.
- R5.4 Should, during the course of an exam, it prove that the allotted time is too short, or one or more questions are unclear or too difficult, the Examiner will report this to the Examination Board as soon as possible.
The Examination Board is authorized to prescribe modified standards for assessment in this case.
The modified standards may not demonstrably be to the students' disadvantage.
- R5.5 Those oral exams and other components of exams which are not detailed on the yearly timetable are taken at a time determined by the examiner(s) in consultation with the student, and in any case (if the student so wishes) within a month after the teaching of the relevant unit of study has been completed.
- R5.6 A minimum of two Examiners are present for oral exams taken by two or more students
- R5.7 A series of oral exams for individual students or groups of students are not open to the public.
- R5.8 A member of the Examination Board is authorized in all cases to be present during an exam, or to have him/herself represented by an Observer.
- R5.9 The role of the Observer is explained to the exam students.

R5.10 The Examiner will hand in the results ultimately 15 working days after the exam.

R5a Signing up for exams

R5a.1 For written exams, the student should register at the latest on the date that is announced in the year timetable for the relevant course year. The registration occurs via Osiris system the Education Affairs Office has prescribed a different manner of registration.

R5a.2 Where the student does not register on time for a written exam session, he surrenders the right to take part in the relevant exam (see art. 8.10). If the student still appears at the written exam session, the examiner has the right to refuse to assess the work handed in.

R5a.3 In cases beyond one's control (force majeure), and at the discretion of the managing committee of the Examination Board, the student who has not registered on time for a written exam session can still be allowed to take part.

R5b Plan of action⁸

R5b.1 The student has to ask permission from the Examination Board for each exam attempt of an unit of study in case he/she did not finish the first two attempts with sufficient result (see OER-CEM2010 article 8.3)

R5b.2 The Examination Board delegates his power to handle these requests to the student adviser.

R5b.3 To get permission the student will deliver, if necessary after consultation with the student adviser and/or the examiner, a plan of action which contains at least the following:

a An evaluation of prior attempts both in terms of hours spent as well as in terms of result

b A detailed description of the preparation of the next attempt

R5b.4 When a student will a third or further exam attempt for the same unit of study without permission of the Examination Board, the Examination Board has the right to strike the result even if this result has already been registered.

R5b.5 In special cases, in the judgement of the student adviser, the decision can be made, that a student doesn't need to make a plan of action to get permission to take part of the exam.

R6 Order during exams

R6.1 The Examiner appoints one or more Invigilators who ensure that an exam runs smoothly. Student assistants can never be invigilator. BOZ CiT will make a list of invigilators.

R6.2 Where the responsible examiner himself is not, or cannot be, present in the examination room during the exam session, he – or an informed person who can take on the role of examiner – is reachable for the duration of the exam.

R6.3 Students are required to carry a proof of registration (student card) during all exams.

⁸ The counting of attempts starts in the year of study 2010-2011. Attempts from the years before don't count

- R6.4 The student is regarded as taking part in a written exam when he has received the question paper for the exam.
- R6.5 The student is not allowed to have a mobile telephone with reach in the examination room.
- R6.6 Whenever a student is delayed he/she can participate in the written exam no more than 30 minutes after the start of the exam.
- R6.7 Students can no leave the examination room without permission of the invigilator for the first 60 minutes of the session.
- R6.8 If the student does not obey the rules stated in paragraph R6.3-6.7, the examiner or invigilator can on the spot disqualify the right to take place in the examing.
- R6.9 In the case of cheating, a student's work will not be assessed and the Examination Board will be informed. The Examination Board is authorized to ban that student from taking that particular exam for a maximum of one year. In case of premeditated cheating, the Examination Board is authorized to ban the student from taking any exams for a maximum of one year.
Cheating is understood to mean:
- a The use of more or different aids during exams than that specified in Osiris or the ELO by the Examiner prior to the exam.
 - b The use of aids or assistance during an exam of which the student knew, or could be expected to have known, that these were not permitted.
The aids or assistance meant in the previous sentence are in any case:
 - i Copying, for example:
 - using cheat sheets;
 - copying another's work;
 - allowing another to copy one's work;
 - communicating about the content of the exam with any party other than the Invigilators during the exam;
 - using electronic equipment.
 - ii Forgery.
 - c Behaviour by students concerning which the Examiner has specified in writing, prior to the exam, that such behaviour will be considered fraudulent and whereby the Examiner has specified what the consequences will be in case such behaviour is observed. Such behaviour could include showing one's work to other students.
 - d Plagiarism.

R6a Right of inspection

- R6a.1 In extension to OER-CEM2011 article 12.1 the following rule applies: The student can at his own expense copy or have copies made of his assessed work

- R6a.2 Concerning practical reports and papers/projects, the following agreement for inspection of own work applies. The relevant practical leader, seminar leader, or examiner determines:
- a whether the reports can be given back to the students involved after the stated period of two months and
 - b whether (photo-) copies may be made of the assessed reports

R7 Regulations in case of calamities

- R7.1 The following applies if a calamity occurs or threatens to occur shortly before an exam: if a calamity threatens to occur shortly before an exam, the exam is postponed. The Examiner determines a new exam date and time in consultation with the Programme Director.

R8 --

This regulation is disposed

R9 Pass / fail regulations

- R9.1 The Examination Board establishes a pass/fail regulation for each exam
- a A unit of study is successfully completed if the result is at least a 6 (rounded to the nearest whole number).
 - b If the number behind the decimal point is 0.50 or higher, the result is rounded up to the next whole number.
 - c A result between 0 and 1.49 is rounded up or down to 1.
 - d Results of components of exams are expressed in one of the numbers 1-10, possibly with one decimal point. Unless the examiner indicates different a component of an exam is finished with sufficient result if the result is at least 5.5.
 - e If not all components of a unit of study are completed successfully in the quartile(s) the unit of study is followed, the result for the unit of study is the lowest component result. If a result for a component is missing, the result will be NV (see R9.3)
 - f A programme is completed successfully if all units of study are completed with sufficient result
 - g The examination board can deviate from the rule with respect to the valid authorized result stated in OER-CEM2011 paragraph 11.5
- R9.2 If a unit of study, or parts of a unit of study, is assessed by more than one Examiner, the responsible Examiner and/or Coordinator will ensure that all Examiners apply the same standards. The results of exam components (tests, assignments) are recorded in writing in the Examiner's own administration.

- R9.3 The assessment is generally expressed in the form of a mark between 1 and 10. The marks are defined as follows:

1	Very poor	5	Nearly satisfactory	9	Very good
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2	poor	6	Satisfactory	10	excellent
3	Very unsatisfactory	7	Very satisfactory		
4	unsatisfactory	8	good		

Exam components may also be assessed alphanumerical:

C4	Compensated 4	O	Insufficient
C5	Compensated 5	V	Sufficient
NV	Absent	VR	Exemption
NVD	Not accomplished	HNTD	No need to do

- R9.4 Results from other educational institutes, which are recorded in the examination programme with approval of the examination board, can't be translated to the judging system of the UT. If the judging system is different (not a mark 1-10 conform the table in R9.3), sufficient results will be administrated as V. Insufficient results will be administrated with O. There will be a translation of the EC's of the unit of study.j
- R9.5 The result of the final examination is not approved before all exams of the programme have been taken and the graduation presentation (belonging to the 'Graduation Project'), as the last part of the final exam, has been held.
- R9.6 When the student has satisfied the requirements for passing in accordance with the regulations, the graduation committee is empowered to declare that the student has passed, and to carry out, or have carried out, the ensuing procedures.
- R9.7 Notwithstanding what is stated in paragraph R9.6, and on the basis of a written and duly reasoned request from a student, the managing committee of the Examination Board can, in special circumstances, permit a deviation from the requirement stated in paragraph R9.5 that the graduation presentation be the last exam component of the final examination. When the student has taken all the requested exams, and is eligible for a pass in accordance with the regulations, the managing committee of the Examination Board can declare that the student has passed, and can carry out, or have carried out, the ensuing procedures.
- R9.8 The examiner or the Examination Board will establish whether the student satisfies the criteria for the final examination. This power can be delegated to the student adviser or the Education Affair Office.
- R9.9 A student who does not meet the criteria for passing in accordance with the regulations can submit a duly reasoned request to the Examination Board in order to determine whether he has passed the examination or not.
- R9.10 Within two months of receiving the request stated in paragraph R9.9, the Examination Board informs the student of its decision in a duly reasoned and written statement.
- R9.11 In the case stated in paragraph R9.9 the examination board makes its decision in accordance with a normal majority of votes
- R9.12 If the required majority mentioned in paragraph R9.9 is not achieved, the student request is rejected.

R9.13 Decisions as intended in paragraph R9.10 can only be taken if all members of the Examination Board, or their substitutes, are present.

R10 Graduating with distinction

R10.1 The Examination Board sets a regulation for graduating from the programme CEM with distinction

R10.2 The regulation includes the following criteria:

- a Should the student have demonstrated exceptional ability in taking the Master's examination, this may be indicated on the diploma with the words 'with distinction' (in Dutch 'met lof').
- b There is a case of exceptional ability if all of the following conditions are met:
 - i the average mark achieved for all components of the final examination, excluding the Graduation Project is at least 8; units of study that have not been assessed with a mark or for which exemption was granted are not included in determining the average mark described above.
 - ii no examination result has been assessed as unsatisfactory and no more than one examination with a mark of 6;
 - iii no more than one third of the entire programme was exempted;
 - iv the final mark of the final unit of study (Graduation Project) is at least a 8;
 - v the Master's programme is completed within 2.5 years, unless extraordinary circumstances justify a longer period, this at the discretion of the Examination Board. Extraordinary circumstances in any case include the circumstances recognized under the regulations for granting graduation support.
- c Should the student fail to fully meet these conditions, the Chair of the Graduation Committee or the Programme Director may submit a proposal to the Examination Board for the granting of the accolade 'with distinction'. In this case the extraordinary circumstances and the exceptional performance of the student will need be additionally motivated.

R11 Certificates and registration

R11.1. A diploma is awarded by the Examination Board as proof that the Master's examination has been successfully completed. The following regulation holds for the countersigning of the diploma

- a. When the student has passed in the manner given in paragraph R9.4, the diploma is signed by the two members of the graduation committee who have determined the result of the final examination. If the second member of the graduation committee is not present at the graduation presentation in order to sign the diploma, a member of the Examination Board should sign in his place.
- b. In all other circumstances the diploma is countersigned by the chairman and at least one other person who is so designated by the Examination Board.

R11.2. An appendix is included with the diploma recording the components of the examination and the results of these components. Components that were not part of the examination, but for which the student sat an exam at their own request, which exam

was held prior to the awarding of the results of this examination, are also recorded in this appendix.

- R11.3. The appendix to the Master's diploma is included in a diploma supplement. This supplement is intended to provide insight into the nature and content of the completed programme, among others to promote the international recognisability of the programmes.
- R11.4. If the Examination Board has awarded the accolade 'with distinction' to the student then this is cited on the diploma.
- R11.5. Students who have successfully completed more than one exam but cannot be awarded a diploma as meant in paragraph R.1, will receive, at their own request, a testimony prepared by the Examination Board which in any case will record the results of the successfully completed exams (article 7.11, paragraph 4).
- R11.6. The Educational Affairs Office (BOZ) takes care of the registration of results of (parts of) units of study
- R11.7. BOZ registers which diplomas have been handed to an examinee. No information about registered data, apart from data about the diplomas handed-out, are given to those other than the examinee, without his express permission, except to:
 - a. Those taking part in the examination meeting
 - b. The members of the Examination Board
 - c. The student deans
 - d. The Examination Appeal Board
 - e. Those charged by the faculty with preparing requests for financial support from the graduation funds.
 - f. The mentor(s) and tutor(s), the student advisor and the graduation teacher(s).
 - g. The Programme Director
 - h. The programme coordinator
 - i. The Dienst Uitvoering Onderwijs (DUO, formerly Information Management Group (IB-groep))

R12 Exemptions

- R12.1. The Examination Board grants exemption for taking exams in units of study and/or participating in practical exercises, if
 - a. a unit of study, which is of an equivalent level and of an equivalent nature as regards its objectives, has been successfully completed within another programme, or within another recognized institution of higher education, which institution is considered to be of equal standing.
 - b. the student has achieved the prescribed learning objectives in another manner, as is demonstrated by supporting documents, provided by the student and assessed by an authorized examiner.
- R12.2. A request for exemption from the requirement to take exams or to take part in practicals must be made, via the student adviser or the Education Affairs Office, to the managing committee of the Examination Board.
- R12.3. The student has the opportunity to state his case before the decision is taken to grant, fully or in part, the exemption.
- R12.4. The Examination Board can grant a standard exemption to certain groups of students.
- R12.5. Exemptions are confirmed in writing in a statement signed by or on behalf of the managing committee of the Examination Board.
- R12.6. Courses from a bachelorsprogramme can never be the basis of an exemption for courses of a the mastersprogramme

Appendix RB1

The following rules apply in preparing written work:

1. Individual written work

There is one author who obtains an individual assessment on the basis of the written work.

Where passages are included, or data are used, which are taken from the work of others, it must be clearly stated:

- which passages they are (for example, by putting them *in italics* or within “quotation marks”)
- where they come from (by giving a clear source reference: a formal reference to the literature or a phrase such as ‘... *oral information from Mrs. XX*’).

2. ‘Individual’ group written work

Different members of the group are responsible for different parts of the report.

- indicate clearly which member of the group is responsible for which part of the report;

Where passages are included, or data are used, which are taken from the work of other members of the group, it must be clearly stated

- which passages they are (for example, by putting them in italics or within ‘quotation marks’);
- where they come from (for example ‘... this, in addition to the fact that measurements have indicated that the effect is negligibly small (see chapter V of this report), brings us to the conclusion that...’)

For matters taken over from persons outside the group, the same rules apply as for individual written work, of course.

3. ‘Joint’ group written work

The group as a whole is responsible for the complete contents of the report even if each one has taken responsibility for the writing of a separate part.

In that case it is not necessary to indicate precisely which idea is whose. Nevertheless the rules for making use of external sources are still the same as those for individual written work.

When the student does not follow the rules stated above, and thus literally includes someone else’s work (or paraphrases it) without a clear indication of the source, he commits plagiarism.

Not only copying without indicating the source, but also allowing the copying, is taken to be plagiarism/fraud.

In joint group written work it is possible, in principle, in this case to accuse the complete group of fraud!

In cases of plagiarism/fraud, the procedures follow those stated in paragraph R 6.

Appendix RB2

The composition of the Examination Board is as follows:

Prof.dr.ir. J.I.M. Halman, department Building Infrastructure (chairman)
dr.ir. D.C.M. Augustijn, department Water Engineering and Management (secretary)
Prof. dr.ir. E.C. van Berkum, department Centre of Transport Studies
dr. G.A.M. Jeurnink, faculty EWI, department AAMP
ir. J.G de Kiewit (register)

The managing committee of the Examination Board is formed by the chairman and secretary.
The Examination Board can be addressed by regular mail or email via the register
(j.g.dekiewit@utwente.nl, Postbus 217, Horst Z-218, 7500 AE Enschede).