

**TEACHING AND EXAMINATION REGULATIONS
(TER)
(see Article 7.13 of the Higher Education and
Research Act)**

2010-2011

**MASTER'S PROGRAMME
EMBEDDED SYSTEMS**

**EINDHOVEN UNIVERSITY OF TECHNOLOGY
DELFT UNIVERSITY OF TECHNOLOGY
UNIVERSITY OF TWENTE**

The Board of the Mathematics and Computer Science Department of Eindhoven University of Technology, the Board of the Electrical Engineering, Mathematics and Computer Science Department of Delft University of Technology and the Board of the Electrical Engineering, Mathematics and Computer Science Department of the University of Twente

in view of articles 9.15, first paragraph, subparagraph a, 7.13, first and second paragraph, 9.38, subparagraph b, and 9.18, first paragraph, subparagraph a, of the Higher Education and Scientific Research Act of the Netherlands

having heard the recommendations of the involved Education Committees

with due observance of the consent of the involved Department Councils

hereby establishes

Teaching and Examination Regulations for the Embedded Systems Master's degree programme.

Section 1 - General

Article 1 – Definitions of terms used

The terms used in these regulations should be interpreted as meaning the same as in the Higher Education and Scientific Research Act, insofar as they are defined in that Act.

The following terms are to be defined thus:

- a. the Act: the Higher Education and Scientific Research Act (in Dutch, the WHW), in the Dutch Bulletin of Acts, Orders and Decrees, number 593 and as amended since;
- b. the Dean: If an institution that is fully or partly responsible for the programme has opted for a Joint Department Board, then "Dean" will also include the Department Board; where matters relate only to one of the departments named on the title page: the Dean of that department: for broader issues: the three Deans collectively;
- c. programme: the Master's degree programme as denoted in Article 7.3a paragraph 1, subparagraph b of the Act;
- d. student: anyone enrolled at Eindhoven University of Technology, Delft University of Technology or the University of Twente as a student or external student for the purpose of benefiting from education or for the purpose of sitting the interim examinations and undergoing the examination which form part of the programme;
- e. subject: a unit of study within the programme as referred to in Article 7.3, paragraphs 2 and 3 of the Act;
- f. practical: a practical exercise as intended in Article 7.13, paragraph 2, subparagraph d of the Act, taking one of the following forms:
 - writing a thesis
 - conducting a project or developing an experimental design
 - completing a design or research assignment
 - conducting a literature review
 - completing an internship
 - giving a public presentation
 - participating in fieldwork or an excursion
 - conducting tests and experiments
 - writing a position paper

- or participating in other educational activities aimed at enabling participants to attain certain knowledge, insights or skills;
- g. interim examination: an assessment of the student's knowledge, insight and skills in relation to a subject, as well as the marking of that assessment by at least one examiner, appointed for that purpose by the Board of Examiners;
- h. examination: an assessment by which the Board of Examiners, in accordance with Article 7.10 of the Act, establishes whether all examinations in the various subjects that constitute the Master's degree programme have been successfully completed;
- i. Board of Examiners: the programme's Board of Examiners, which has been installed in accordance with Article 7.12 of the Act;
- j. examiner: the individual who, in line with Article 7.12, paragraph 3 of the Act, has been appointed to set the examinations;
- k. credit: a credit awarded in accordance with the European Credit Transfer System (ECTS); one credit denotes a study load of 28 hours;
- l. working day: Monday to Friday with the exception of recognised national public holidays;
- m. study guide: a guide to the degree programme containing specific information pertaining to the various subjects;
- n. institution: Eindhoven University of Technology, Delft University of Technology or the University of Twente;
- o. disability: all conditions which are (at least for the period in question) chronic or lasting in nature and which form a structural limitation for the student in receiving education, sitting interim examinations or taking part in practicals.

Article 2 – Programme composition

1. The following points regarding the programme are included in the Implementation Regulations in the appendix:
 1. study load,
 2. composition of the degree programme.
 3. core programme,
 4. elective subjects,
 5. homologation courses,
 6. internship,
 7. graduation work,
 8. study programme,
 9. elective degree programme,
 10. the form of the interim examinations,
 11. The frequency, terms and sequence of interim examinations.
2. The appendix forms an integral part of these regulations.

Article 3 – The programme's final attainment levels

Master of Science graduates:

- are qualified to degree level within the domain of 'science engineering & technology',
- are competent in the relevant domain-specific discipline, namely embedded systems,
- are able to conduct research and design independently,
- have the ability and attitude to include other disciplines in their research, where necessary,
- have a scientific approach to complex problems and ideas,

- possess intellectual skills that enable them to reflect critically, reason and form opinions,
- are good at communicating the results of their learning, thinking and decision-making processes on an international level,
- are aware of the temporal and social context of science and technology (comprehension and analysis) and can integrate this into their scientific work,
- in addition to a recognizable domain-specific profile, possess a sufficiently broad basis to be able to work in an interdisciplinary and multidisciplinary context, the latter in the sense of being focused on other relevant disciplines needed to solve the design or research problem in question,
- actively seek new potential applications, taking into consideration the social context.

Article 4 – Admission to the programme

1. Students in possession of a diploma which shows that they have passed the final examination for the Electrical Engineering (TU/e), *Elektrotechniek* (TUD, UT), *Technische Informatica* (TU/e, TUD, UT), *Telematica* (UT) or *Informatica* (RUG, UU, UvA, VU, UL, RU, OU) Bachelor's programme will be eligible for admission to the programme.
2. Students who are not in possession of the diploma mentioned in paragraph 1 will require a certificate of admission issued by the Dean.
3. Notwithstanding the provisions of paragraph 1, the Dean may under special circumstances admit a student to one or more interim examinations or practicals of the programme before the student has passed the Bachelor's examination. A limited period of validity may be set for such permission.

At Eindhoven University of Technology, admission will be granted in any case if the student has sufficient results for or exemption from study components in the Bachelor's programme with a study load of at least 160 credits and, if applicable, has sufficient results for the components of a specialization in the Bachelor's programme that prepares the student for the corresponding Master's programme.

At the University of Twente admission requires explicit permission. Permission will not be granted to students without a first year diploma (propedeuse). Permission can be granted if 150 credits or more of the Bachelor's programme are secured. The Board of Examiners can pose additional restrictions on the courses that must be comprised within the 150 credits, and on the term for completion of the bachelor programme. The permission is limited in the sense that without a Bachelor diploma a student never can start the internship or the graduation project.

4. Admission of foreign students:
 - 1) Command of English: students must have an IELTS or comparable score of at least 6. Comparable scores are:

- TOEFL paper-based: 550;
- TOEFL computer-based: 213;
- TOEFL internet-based: 80;
- Cambridge certificate: A, B or C.

At the University of Twente only TOEFL internet based is accepted, with a score of 20 for all 4 parts of the test. At the University of Twente the IELTS score of 6.0 for admission is a minimum score for all parts of the test.

- 2) The level of education in the country in which the student has completed his/her pre-university education: this must be more or less comparable with that in the Netherlands.
- 3) Level of knowledge: the student must have accumulated sufficient knowledge on the basis of the subjects he/she has studied abroad to be at a level comparable to that of Dutch students who are admitted to the Master's programme.
- 4) At Delft University of Technology, unless the Bachelor's degree is of an adequate level and quality, holders of a foreign Bachelor's degree can only be admitted to the Master's

programme if they have a Grade Point Average of at least 75% of the maximum available points.

Article 5 – Language

Education shall be provided in English. Students shall sit interim examinations and undergo the examination in English. The Dean has the authority to adapt language criteria under certain circumstances.

Section 2 – Interim examinations

Article 6 - Number, times and frequency of examinations

1. There are at least two opportunities in each academic year for sitting interim examinations.
2. A time table of all opportunities for sitting written interim examinations is drawn up on an annual basis and details are published before the start of the academic year. If absolutely necessary, changes can be made to this interim examinations time table but only with approval of the Board of Examiners and if the changes are communicated to students through the official means of communication at least 4 weeks in advance. In case of force majeure, deviation from this period is allowed, only by decision of the Board of Examiners.
3. Notwithstanding the provisions of paragraph 1, there will be at least one opportunity in a year to sit interim examinations relating to subjects not taught in that academic year.
4. If a subject is removed from the study programme, two opportunities to sit an interim examination in this subject will be granted after the last classes in this subject have been taught: an interim examination following the last of the classes, and one resit in the same academic year. In the following academic year there will be two subsequent resits.
5. In exceptional cases, the Board of Examiners may permit a deviation from the standard number of times and the way in which certain interim examinations may be administered in favour of the student.

Article 7 – Validity of interim examinations

1. The result of an interim examination is valid for an unlimited period.
2. However, in cases where the interim examination result dates from over six years ago, the Board of Examiners may impose an additional or substitute interim examination.

Article 8 – Oral interim examinations

1. Oral interim examinations will be held in public, unless determined otherwise by the Board of Examiners in a special case or unless the student has formally objected to the public nature of the interim examination.
2. As a rule a second examiner will be present at an oral interim examination, but not at the University of Twente.
3. Prior to an oral interim examination, the examiner must ask the student to provide proof of identity.

Article 9 – Determining and announcing the results

1. The examiner is required to determine the result of an oral interim examination as soon as the interim examination is finished and to supply the student with a written statement of the result.
2. In the case of written interim examinations, the examiner is required to determine the result as soon as possible after the interim examination but within 15 working days at most. Taking due account of the student's right to privacy, the student administration then ensures that the results are registered and published within 20 working days of the interim examination date. If the examiner is unable to meet these criteria due to extenuating circumstances, the examiner must inform the Board of Examiners, stating reasons for the delay. The Board of Examiners will then pass this information on to the student or students without delay, and a new date for announcing exam results will simultaneously be made known.
3. Interim examinations taken in other than oral or written form are usually taken by delivering a report or an elaboration of exercises, here referred to as a piece of work. In case several pieces of work need to be delivered, the last piece of work is meant. The examiner will determine the result of such an interim examination as soon as possible, but within 15 working days after the final delivery date that has been determined by the examiner and has been communicated to the student, provided that the piece of work has been delivered by the student to the examiner on this date at the latest.
4. When receiving the result of an interim examination, the student will be made aware of his or her right to inspect the results as referred to in Article 10, the opportunity for a subsequent discussion as referred to in Article 11 and the opportunity to lodge an appeal with the Examination Appeals Board.

Article 10 – The right to inspect the results

1. For a period of at least 20 working days after notification of the results of any written interim examination, the student has the right to inspect his or her marked work, on request. If a student intends to lodge an appeal regarding the marking of his or her written work, he or she will be supplied with a copy of the marked work at cost price.
2. During the period referred to in paragraph 1, all interested individuals may acquaint themselves with the questions and assignments set in the interim examination in question, as well as with the criteria used for marking.
3. The Board of Examiners may determine that the right to inspection as referred to in paragraphs 1 and 2 will be exercised at a location specified beforehand and at no less than two specific times, also to be decided in advance.
If the student can prove that he/she is or was unable to be present at the location at the set time due to circumstances beyond his or her control, then another opportunity will be provided, if possible within the period stated in paragraph 1.
The location and times mentioned in the first sentence will be announced within five working days.

Article 11 – Subsequent discussion of the interim examination results

1. As soon as possible after the results of an oral interim examination have been announced, an opportunity will be arranged for the examiner to discuss the results with the student, if so requested by the student or at the instigation of the examiner. At this meeting, the reasons behind the marks awarded will be explained.

2. For a period of 20 working days after the results have been announced, students who have taken a written interim examination may submit a request to discuss the results with the relevant examiner. The discussion will take place within a reasonable time span and at a place and time determined by the examiner.
3. In cases where a collective discussion is organised by or on the instructions of the Board of Examiners, a student may only submit a request, as referred to in the preceding paragraph, if the student was present at the collective discussion and if the student provides a good reason for the request or if, due to circumstances beyond the student's control, the student was unable to attend the collective discussion.
4. The provisions of paragraph 3 are similarly applicable if either the Board of Examiners or the examiner first gives the student the opportunity to compare his/her answers with model answers.
5. The Board of Examiners may permit deviations from the provisions of paragraphs 2 and 3.

Section 3 – Studying with a disability

Article 12 – Adaptations to assist students with a disability

1. Students who have a physical or sensory disability are entitled to adaptations in teaching, interim examinations and practicals. If possible, the student must submit a written request to the Dean at least three months before the student is due to participate in coursework, interim examinations or practicals. These adaptations will be geared as much as possible to a student's individual needs, but they must not affect the quality or the degree of difficulty of a subject or an interim examination programme. The facilities provided to this end may involve adapting the form or duration of interim examinations or practicals to the student's individual situation or making practical aids available. At Eindhoven University of Technology, this request should be submitted to the STU/International Relations Office. At Delft University of Technology and at the University of Twente, this request should be submitted to either a university student counsellor or the department student counsellor.
2. The request referred to in paragraph 1 should be accompanied by a recent medical certificate from a doctor or a psychologist. If there is evidence of dyslexia, for example, the request should be accompanied by a document issued by a recognised dyslexia-testing bureau (i.e. registered with BIG, NIB, or NVO). If possible, this certificate should also give an estimation of the extent of the disability.
3. The Dean will decide on requests for adaptations to the educational environment. The Board of Examiners will decide on requests for adapting interim examinations. The decision must be announced within four weeks.

Section 4 – Approval by the Board of Examiners

Article 13 Exemption from interim examinations or practicals

1. After having been advised by the relevant examiner, the Board of Examiners may decide to exempt students from an interim examination or practical. Conditions for exemption are to be specified in the Rules and Regulations of the Board of Examiners.
2. The Board of Examiners may exempt a student from a specific interim examination only on the grounds of the content, level and quality of interim examinations successfully completed earlier or on the grounds of the student's prior knowledge, insights and skills developed outside of higher education.

Article 14 Elective subjects

Criteria for approval of elective subjects to be followed by the student, as referred to in the appendix, are contained in the Rules and Regulations of the Board of Examiners.

Article 15 Free programme choice

The Board of Examiners shall decide on reasoned requests from students for free programme choice as referred to in Article 7.3c of the Act. Conditions related to this matter are to be specified in the Rules and Regulations of the Board of Examiners.

Section 5 – Examination

Article 16 – The times and frequency of the examination

There shall be an opportunity to undergo the Master’s examination at least twice a year. The dates set by the Board of Examiners are to be published before the start of the academic year.

Article 17 – Student support and guidance

Responsibility for student support and guidance lies with the Dean. This includes informing students about study options within the programme or elsewhere. One or more study advisers may be appointed for this purpose.

Article 18 – Monitoring academic progress

1. The Dean is responsible for the registration and timely publication of the exam results of individual students in the institution’s virtual learning system.
2. The Dean is responsible for facilitating discussion of the results between the student and the study adviser, when appropriate.

Section 5 – Appeals and objections

Article 19

1. Decisions by the Board of Examiners based on these regulations may be appealed within four weeks after the announcement of the decision to the student in question. Appeals should be lodged with the Examination Appeals Board.
2. Decisions by the Dean based on these regulations may be appealed within six weeks after the announcement of the decision to the student in question. Objections are to be lodged with the Dean.

Section 6 – Contravention, changes and implementation

Article 20 – Contravening the Regulations

If the study guide or any other regulations relating to the study programme or the interim examination programme prove to contravene these Regulations and the accompanying appendix,

precedence will be given to the provisions of these Regulations with which the appendix forms an integral whole.

Article 21 – Amendments to the regulations

1. Any amendments to these regulations will be made by special resolution of the Dean.
2. No amendments will affect the current academic year unless it is reasonable to suppose that the interests of students will not be adversely affected.
3. Amendments to these regulations may not retroactively affect a decision by the Board of Examiners to the detriment of the student.

Article 22 – Transitional regulations

1. If the composition of the study programme undergoes intrinsic changes or if these regulations are amended, the Dean will draw up transitional regulations that will be incorporated into appendix of these Regulations.
2. If and when appropriate, such transitional regulations are required to include:
 - a. a provision concerning the exemptions that can be given on the basis of the interim examinations already passed;
 - b. a provision specifying the validity of the transitional regulations.

Article 23 – Publication of the regulations

The Teaching and Examination Regulations and the appendix, which forms an integral whole with the Regulations, shall be published on the institution's website.

Article 24 – Entry into force Date of Commencement

These regulations will come into effect on September 1, 2010.