TEACHING AND EXAMINATION REGULATIONS
(TER)

(see Article 7.13 of the Higher Education and Research Act)

2014-2015

MASTER'S DEGREE PROGRAMME
in
Systems Engineering, Policy Analysis and
Management (SEPAM)

DELFT UNIVERSITY OF TECHNOLOGY

TABLE OF CONTENTS

Teaching and Examination Regulations

Section 1 - General

Article 1 – Areas to which the regulations apply

1. These regulations apply to the teaching and the examinations related to the Master's degree programme in Systems Engineering Policy Analysis and Management (SEPAM), hereafter to be referred to as the programme.

2. The teaching and organisation of the programme is the responsibility of the Faculty of Technology, Policy and Management at Delft University of Technology, hereafter to be referred to as the faculty.

3. The programme is governed by Implementation Regulations which constitute part of these Teaching and Examination Regulations.

Article 2 – 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 programme:	the Master's degree programme as denoted in Article 7.3a paragraph 1, subparagraph b of the Act;
c. student:	anyone enrolled at Delft University of Technology as a student or extraneous student for the purpose of benefiting from education and/or for the purpose of sitting the examinations and undergoing the degree audit which form part of the programme;
d. cohort:	the group of students who have registered for a degree programme for the first time in a given academic year;
e. semester: teaching period:	half a academic year half a semester;
f. subject:	a teaching unit within the programme as intended in Article 7.3, subsections 2 and 3 of the Act; a subject can consist of a number of components;
g. 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; • writing a scientific paper; • conducting a project; • completing a design or research assignment; • conducting a literature review; • completing a internship; • participating in fieldwork or an excursion; • conducting tests and experiments; • participating in other educational activities aimed at enabling participants to attain certain skills.
h. examination:	an assessment of the knowledge, insight and skills of a student 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;
i. component examination:	an assessment of the knowledge, insight and skills of a student in relation to a component within a subject, as well as the marking of that

	assessment by at least one examiner, appointed for that purpose by the Board of Examiners;
j. degree audit:	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 programme have been successfully completed;
k. Board of Examiners:	the programme's Board of Examiners, which has been installed in accordance with Article 7.12 of the Act;
l. examiner:	the individual who, in line with Article 7.12, paragraph 3 of the Act, has been appointed to set the examinations;
m. Implementation Regulations:	the Implementation Regulations which form part of these Teaching and Examination Regulations;
n. credit:	a credit awarded in line with the European Credit Transfer System (ECTS); one credit denotes a norm study load of 28 hours;
o. working day:	Monday to Friday with the exception of recognised national public holidays;
p. study guide:	a digital guide to the programme containing specific information pertaining to the various subjects;
q. institute:	Delft University of Technology;
r. Blackboard:	the electronic system designed for the exchanging of teaching information;
s. Osiris:	the electronic education register system
t. 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 and/or sitting examinations or taking part in practicals;
u. dean	The dean of the faculty Technology Policy and Management;
v. lecturer	lecturers who are teaching in the programme MSc SEPAM;
w. degree programme director	director of the programme MSc SEPAM.

Article 3 – The programme objective

The Master's programme in Systems Engineering, Policy Analysis and Management intends to educate students as designers and managers of complex multi-actor technical systems, and of policy and decision making processes regarding such systems, with the ultimate objective to improve the quality of both design and management practice. The programme focuses on designing large-scale technological systems within a multi-actor context, e.g. the design of large-scale and complex systems in the areas of transport (Transport & Logistics), information and communication technology (Information & Communication), industrial production, energy and water management (Energy & Industry) and/or land-use and development (Built Environment & Spatial Development). The programme has been designed to transfer multidisciplinary knowledge and practical skills in the areas of problem structuring, systems analysis and design, policy analysis and design, and decision support to candidates who hold a Bachelor's degree in Systems Engineering, Policy Analysis and Management ('Technische Bestuurskunde') or similar.

Article 4 – The programme's final attainment levels

A Master's graduate:

1. is competent in one or more scientific disciplines

a Has a thorough mastery of the multidisciplinary field of analysis, design and management of multi-actor systems extending to the forefront of knowledge and practical skills.

b Is capable of applying this knowledge to multi-actor engineering and management problems in at least one of the following technological domains: Transport & Logistics, Energy & Industry, Information & Communication (including Information Architecture) or Built Environment & Spatial Development.

c Has knowledge in the field of institutional economics, ethics, law, and policy and decision making related to the analysis, design and management of multi-actor systems.

d Looks actively for structure and connections in problem structuring, systems analysis and design, policy modelling and design, and decision support in complex and unpredictable professional environments.

e Has the skill and the attitude to apply essential facts, concepts, principles and theories relevant to the analysis, design and management of multi-actor systems independently in the context of more advanced ideas or applications.

f Is able to make sound judgements in the absence of complete data.

g Is able to reflect on standard methods and their presuppositions; is able to question these; is able to propose adjustments, and to estimate their implications.

2. is competent in doing research

a Is able to reformulate ill-structured research problems. Also takes account of the system boundaries in this. Is able to defend the new interpretation within a multi-actor context .

b Given the process stage of the research problem, chooses the appropriate level of abstraction.

c Is able, and has the attitude to, where necessary, draw upon other disciplines in his or her own research.

d Is able to assess research related to problem structuring, systems analysis and design, policy modelling and design, and decision support on its scientific value.

3. is competent in designing

a Is able to reformulate ill-structured design problems to synthesise knowledge and to solve problems in a creative way when dealing with complex issues. Also takes account of the system boundaries in this. Is able to defend this new interpretation against the parties involved.

b Given the process stage of the design problem, chooses the appropriate level of abstraction and select appropriate views and models and deal with complex issues both systematically and creatively.

c Is able, and has the attitude, where necessary, to draw upon other disciplines in his or her own design.

d Is able to assume leading roles, including management roles, in (inter)national companies and research organisations, and be able to contribute to design .

e Possess the qualities needed for employment in circumstances requiring sound judgement, personal responsibility and initiative, in complex and unpredictable professional environments.

f Is able to formulate new research questions on the basis of a design problem.

4. has a scientific approach

a Is able to identify and take in relevant developments.

b Is able to critically examine existing theories, models or interpretations in the field of multi-actor systems design.

c Has great skill in, and affinity with the use, development and validation of models which can contribute designing new solutions; is able consciously to choose between modelling techniques.

d Is able to document adequately the results of research and design processes with a view to contributing to the development of knowledge in the field and beyond, and is able to publish these results in a scientific way.

5. possesses basic intellectual skills

a Is able to critically reflect on his or her own thinking, decision making and acting, and to adjust these on the basis of this reflection.

b Is able to ask adequate questions, and has a critical yet constructive attitude towards analysing and solving real life problems in the field.

c Is able to form a well-reasoned opinion in the case of incomplete or irrelevant data, taking account of the way in which that data came into being.

d Is able to take a standpoint with regard to a scientific argument in the field, and is able to assess this critically as to its value.

6. is competent in co-operating and communicating

a Is able to communicate in writing in English about research and solutions to problems with colleagues, non-colleagues and other parties involved .

b Is able to communicate verbally in English about research and solutions to problems with colleagues, non-colleagues and other involved parties.

c Is able to debate about both the field and the place of the field in society.

d	Is able to perform project-based work in (inter)national settings.
e	Is able to work within an interdisciplinary team and in a team with great disciplinary diversity, and is able to assume the role of team leader.

7. takes account of the temporal and the social context

a	Understands relevant (internal and external) developments in the history of the fields concerned. This includes the interaction between the internal developments (of ideas) and the external (social) developments, and integrates aspects of this in scientific work.
b	Is able to analyse and to discuss the social consequences (economical, social, cultural) of new developments in relevant fields with colleagues and non-colleagues, and integrates these consequences in scientific work .
c	Is able to analyse the consequences of scientific thinking and acting on the environment and sustainable development.
d	Is able to analyse and to discuss the ethical and the normative aspects of the consequences and assumptions of scientific thinking and acting with colleagues and non-colleagues (both in research and in designing), and integrates these ethical and normative aspects in scientific work.

Article 5 – Admission to the programme

1. All students possessing a certificate proving that they have successfully completed their Bachelor of Science studies in "Technische Bestuurskunde" issued by the institute TU Delft will be admitted to the programme.

2. Students who do not possess the degree mentioned in paragraph 1 are required to obtain proof of admission to the programme from the dean, who will seek the advice of the Board of Examiners on this matter.

3. In order to obtain proof of admission, the student must meet or, as the case may be, possess:
   a. the general relevant criteria set by the executive board, laid down in Part 1.2 " Entrance and admission" and appendix 1 "Policy on fees and enrolment" of the Student Charter (central part);
   b. a certificate, together with the accompanying list of marks, proving that he/she possesses knowledge of a sufficiently high level and broad scope to successfully complete the programme within the allotted period.

4. General requirements for admission to the program: see appendix 1 and TPM-Website ->Student Portal-> Master programme -> Sepam.

5. Students who are in possession of the above mentioned bachelors degree's (mentioned in the first paragraph) or proof of admission (mentioned in the second paragraph) can under certain conditions apply for admission to the honours class and/or, research specialisation with the degree programme director. The conditions are mentioned on the TPM-website -> student portal -> Honours Programme.

Article 6 – Completion of bridging programme prior to the degree programme

1. A student who is enrolled on a Bachelor's degree programme with the aim of following a bridging programme prior to the degree programme must complete this bridging programme within one academic year, or within the period of study that has been agreed with the student by the Bachelor's degree programme, extended by twelve months.

2. In the case that the student fails to complete the bridging programme within the specified period, his enrolment will be cancelled as of the first day of the month following the month in which the student would have had to complete the bridging programme. The exclusion from the bridging programme and from the Bachelor's programme applies to the four academic years subsequent to the academic year in which the enrolment is cancelled.

Article 7
Not applicable.

Article 8 – Taking the programme on a full-time or part-time basis

This programme is taught only on a full-time basis.

Article 9 – Language

1. Classes are taught and examinations and degree audits take place in English.

2. Notwithstanding the provisions of subsection 1, the dean can give permission for classes to be taught in Dutch if the particular nature of the subject, the organisation, the quality of the education or the origin of the students gives cause for this.

3. Should a student request permission to complete one or more parts of the examination or the degree audit in a language other than English, this will be subject to the stipulations of the Board of Examiners in this regard, as laid down in the Rules and Guidelines of the Board of Examiners.

Section 2 - Composition of the study programme and the degree audit

Article 10 – Composition of the study programme and the degree audit

1. The composition of the study programme and the relevant transitional regulations are laid down in the Implementation Regulations. Teaching will be provided in the manner described in the study guide.

2. The Master's degree audit forms part of the programme. The programme has a total study load of 120 credits. When a student follows two Master's degree programmes at TU Delft at the same time, he must obtain at least 60 extra unique credits besides a complete Master's degree programme of 120 credits.

3. It is not permitted for any subject in the study programme to have been part of the Bachelor's degree programme on the basis of which the student was admitted to the programme. If a compulsory subject in the study programme was already completed in the aforementioned Bachelor's degree programme of the student, the Board of Examiners will designate an alternative subject in its place. If an elective subject in the study programme was already completed in the aforementioned Bachelor's degree programme the student will choose an alternative elective subject.

Section 3 – Honours Programme

Article 11 – Honours Programme Master

1. Students who meet the criteria referred to on the TPM website ->studentportal -> Honours Programme will be invited to register for the TU Delft Honours Programme Master for outstanding Master's students.

2. Based on the criteria referred to on the TPM website -> studentportal -> Honours Programme, students will be selected and admitted to the Honours Programme Master by the director of studies or an Honours coordinator or Honours committee established by the director of studies.

3. The Honours Programme Master programme will comprise 20 credits:
    a. At least 5 credits must be completed in the TU Delft-wide component of the Honours Programme Master, which consists of the following parts:
    - the subject "Critical Reflection on Technology"
    - playing an active role within the Honours Programme Master community
    b. A maximum of 15 credits may be completed in the faculty component of the Honours Class programme, the composition of which will be described on the TPM website: Studentportal -> Honours Programme.

4. Any student selected for participation in the Honours Programme Master must submit his or her options for the faculty component to the director of studies or the Honours coordinator or Honours committee for approval.

5. The Board of Examiners will be responsible for assessing whether all the requirements of the Honours Programme Master have been met.[1]

6. Any student who has successfully completed the Honours Programme Master will be awarded a certificate signed by the chair of the Board of Examiners and the Rector Magnificus.

Section 4 – Registering and withdrawing

Article 12 - Registering for written examinations

1. Registration to take part in a written examination is done by entering the required data into the examination registration system no later than 14 calendar days (that is, not *working* days) before the examination.
2. Students may submit a request to register for an examination after the deadline mentioned in subsection 1 has passed but no later than two working days before the examination in question, at the central examination desk. The request will be honoured providing that places are available at the time of registration in the room or rooms where the examination is scheduled to take place. The student will be informed one working day before the examination takes place.
3. In the case of circumstances beyond a student's control, whereby the student is unable to register for the examination, the Board of Examiners can still permit the student to participate in the examination.
4. The following applies upon entering the examination room:
   a. only students with valid proof of identity will be admitted to the examination. The following will be accepted as proof of identity: campus card, passport, identity card or driving licence.
   and
   b. students will only be admitted to the examination with a valid examination ticket and/or if they are included in the list of participants.
5. If a student has participated in an examination without a valid examination ticket, the examination work will be considered invalid, will not be evaluated and does not lead to a result.
6. The student can submit a substantiated request to the Board of Examiners to have examination work that is considered to be invalid to be declared valid and to have it evaluated.
7. The Board of Examiners will only agree to the request in exceptional circumstances.

Article 13 - Registering for practicals

1. Registration for practicals will take place in the manner and by the deadline indicated in the study guide or on Blackboard for the practical in question.
2. In special cases the Board of Examiners may deviate from the period of registration referred to in subsection 1, however only in favour of the student.
3. Students who do not register for a practical on time may not participate in that practical. In exceptional circumstances the Board of Examiners may allow the student to participate in the practical.
4. If a student participates in a practical for which the student was not properly registered, the Board of Examiners will declare the results of the practical to be invalid.

Article 14 - Withdrawal or absence

1. It will be possible to withdraw from an examination via Osiris up to 3 days before the examination takes place.
2. Any student who has withdrawn from an examination should re-register on a subsequent occasion, in accordance with the provisions of Article 12.

---

1. [1] The HPM programme is not part of the Master programme, as it consists of extra-curricular modules only. Therefore the Board of Examiners doesn't have to be involved. The director of studies or the Honours coordinator of Honours committee should approve of the programme in advance.

Section 5 - Examinations

Article 15 – Number, times and frequency of examinations

1. There are two opportunities per module per academic year for written examinations:
   - the first opportunity is at the end of the teaching period for the subject to which the exam in question relates,
   - the second opportunity is at the end of the period following the one in which the course was taught. When the course is being taught in period 4, the second exam will take place during the resit period in August.
   - There is one opportunity per academic year for sitting proficiency tests of practicals and projects

2. A timetable of all the opportunities for sitting written examinations is drawn up every semester and distributed before the start of the semester via the TUDelft website -> Studentportal -> Information -> Education -> Timetables.

3. If there is no indication as to the number of times a particular examination can be taken in any one academic year because it relates to a subject not taught by the programme itself, the relevant stipulations in the Teaching and Examination Regulations of the other programme will apply. The Board of Examiners reserves the right to make decisions that deviate from the norm regarding this matter.

4. Notwithstanding the provisions of paragraph 1, there will be at least one chance in a year to sit examinations relating to subjects mentioned in the study guide but not taught in a given academic year.

5. In exceptional cases the Board of Examiners may permit a deviation from dates and the standard number of times that certain examinations can be taken.

6. Students have a maximum of two examinations per subject per year.

Article 16 – Sequence of examinations

The sequence in which students are required to sit examinations and participate in practicals is laid down in the Implementation Regulations.

Article 17 – Validity of examinations

1. The result of an examination is valid for an unlimited period. However, in cases where the examination result dates from over four years ago, the Board of Examiners may impose an additional or substitute examination.
2. The terms of subsection 1 likewise apply to component examinations, unless the validity of the component examination is linked to a period of time in the study guide.

Article 18 – The form of examination and method of assessment

1. Examinations are set as described in the Study Guide.

2. The Board of Examiners may, if it so wishes, deviate from the provisions of subsection 1, in favour of the student.

Article 19 – Oral examinations

1. Only one student at a time will sit an oral examination, unless the examiner in question specifies otherwise.

2. Oral 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 examination.

3. Prior to an oral examination, the examiner must ask the student to provide proof of identity.

Article 20 – Determining and announcing the results

1. The examiner is required to determine the result of an oral examination as soon as it is finished and to supply the student with a written statement of the result. The determination of the date of the exam is the date of the oral examination itself.

2. In the case of written examinations, the examiner is required to determine the result as soon as possible after the examination but within 15 working days at most. The examiner forwards the necessary details to the student administration. 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 examination date. If the examiner is not able to meet these requirements due to exceptional circumstances, he or she must inform the Board of Examiners, stating the reasons for the delay. The examiner will also ensure that the students are informed of the delay as soon as possible. The determination of the date of the written exam is the date of the exam itself.

3. Regarding any examinations that are not taken orally or in writing, the Board of Examiners will determine beforehand precisely how and within what period of time the student will be notified of the results. The determination of dates of exams like papers, reports, reviews etc, is the date of delivery of the definitive version.

4. When receiving the result of an examination, the student will be made aware of his or her right to inspect the results as referred to in Article 21, as well as the opportunity to lodge an appeal with the Examination Appeals Board.

Article 21– The right to inspect the results

1. For a period of at least 20 working days after notification of the results of any written examination, the student has the right to inspect his or her marked work, on request. If a student will regard the marking of his or her work, he or she will be supplied with a copy of the marked work.

2. During the period referred to in paragraph 1, all interested individuals may acquaint themselves with the questions and assignments set in the examination, as well as with the criteria used for marking, a copy of this information shall be provided.

3. The Board of Examiners may determine that the right to inspection or perusal referred to in paragraphs 1 and 2 will take place at a location specified beforehand and at no less than two specific times, also decided on beforehand. 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 well in advance.

Article 22 – Discussing the examination results

1. As soon as possible after the results of an oral examination have been announced, an opportunity can be arranged for the examiner to discuss the results with the student, either at the student's request 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 student inspect his or her marked work of a written examination, he or she 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 described in the preceding paragraph, if he/she was present at the collective discussion and if he/she provides a good reason for the request or if, due to circumstances beyond his/her control, he/she 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 departures from the provisions of paragraphs 2 and 3.

6. Students have the right to appeal to the examination appeals board within 30 working days after publication of the results of the examination. The appeal must be sent to the chair of the Board of Examiners.

Section 6 - Studying with a disability

Article 23 – Adaptations to help students with a disability

1. Students who have a physical or sensory disability are entitled to adaptations in teaching, examinations and practicals, on written request. These changes 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 examination programme. The facilities provided to this end may involve adapting the form or duration of examinations and/or practicals to the student's individual situation or making practical aids available. (see appendix)

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, the request should be accompanied by a document issued by a recognised dyslexia-testing bureau (i.e. registered with BIG, NIP, or NVO). If possible, this certificate should also estimate the extent to which the disability forms an obstacle to study progress.

3. Requests for the adaptation of teaching facilities will be decided upon by the dean or by the director of education acting on the dean's behalf. The Board of Examiners will decide on requests for adaptations to examinations.

4. The student should ask for the facilities specified in the previous paragraphs within 20 work days of the start of the course. The certificate referred to in paragraph 2 should accompany this request.

Section 7 - Exemptions

Article 24 – Exemption from examinations or practicals

1. After having been advised by the relevant examiner, the Board of Examiners may decide to exempt students from an examination or practical on the grounds of:
   a. an examination, degree audit or practical completed within the Dutch higher education system or elsewhere which, as regards content and study load, corresponds with the subject for which exemption is sought, or
   b. of knowledge and/or skills acquired outside the higher education system.
2. The extent of the exemptions may not exceed 15 EC.

Section 8 - Degree audit

Article 25 – The times and frequency of the degree audit

All students can apply to take the degree audit as soon as they have fulfilled all the conditions of their degree programme, and have provided the student administration office with proof of all the course components they have passed.

Section 9 - Study progress checks

Article 26
Not applicable

Article 27
Not applicable

Article 28 – Study progress checks

1. The Dean is responsible for supervising the progress of all students enrolled on the degree programme.

2. The faculty has an evaluation system for the purpose of monitoring and if necessary adjusting study load.

3. The faculty board offers support and guidance to students covering programme supervision, counselling and other advice.

4. The student administration is responsible for ensuring that each student is able to see and check his/her own results via the student information system Osiris.

Section 10 - Contravention, changes and implementation

Article 29 – Contravening the regulations

If the study guide and/or any other regulations relating to the study programme and/or the examination programme prove to contravene these Teaching and Examination Regulations and the accompanying Implementation Regulations, precedence will be given to the provisions of these Teaching and Examination Regulations in combination with the Implementation Regulations.

Article 30 – Changes to the regulations

1. Any changes made to these regulations will be made by special resolution of the dean.

2. No changes made will affect the current academic year unless it is reasonable to suppose that the interests of students will not be adversely affected.

3. None of the changes may, to the detriment of the student, influence any decisions concerning a student that are made by the Board of Examiners on the basis of these regulations.

Article 31 – 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 the Implementation Regulations.

2. Such transitional regulations are required to include:
   a. a provision concerning the exemptions that can be given on the basis of the examinations already passed;
   b. the number of times that it is still possible to sit for examinations under the conditions of the old programme;
   c. a provision specifying the period of validity of the transitional regulations.

3. If a compulsory subject is removed from the study programme, the subject will be taught for one more time after announcing that the subject will be removed, unless there are alternative classes obviously. Four opportunities to sit an examination in this subject will be granted after the last classes have been taught: an examination following on from the classes, a resit in the same academic year, and two resits in the subsequent academic year.

4. For one additional subsequent academic year, students who were registered as Pre-Master's students on 31 August 2012, will have the opportunity to undertake Master's subjects. After 1 September 2013, students must have passed the Bachelor's degree, on which his/her admission was based, and/or completed the transition programme that he/she had to complete in addition to the Master's degree course, prior to studying further on this degree programme.

Article 32 – Publication of the regulations

1. The dean is responsible for finding a suitable way of publishing these regulations and the relevant Implementation Regulations, as well as any changes to the regulations.

2. The Teaching and Examination Regulations together with the accompanying Implementation Regulations, will always be published on the TPM website -> student portal -> MSc Sepam -> Rules and Guidelines TPM.

Article 33 – Entry into force

This ruling will come into effect on 1 September 2014.

Drawn up by the dean of the faculty on 29 August 2014.

Appendix to Article 23

Adjustments to the assessment procedure, including examinations and other forms of assessment, may concern the following matters, among others:
-
- the course material (making available course material that is more easily accessible, for example);
- the form of assessment (e.g. replacing a written examination by an oral one, or vice versa, testing knowledge of the studied material by way of interim examinations, or granting an exemption from attendance);
- time-related matters (such as granting more time during examinations, spreading out examinations over the examination period, granting exemptions from admission requirements, or extending the period within which a component must be completed);
- the resources that candidates are allowed to use during examinations (such as an English-Dutch dictionary for candidates with dyslexia);
- the location (taking examinations in a separate distraction-free room).

Adjustments to the educational facilities may concern the following matters, among others:
- making modified furniture available in the classrooms and examination rooms;
- making special equipment available (such as magnifying or Braille equipment for blind or partially sighted students, or audio induction loops and solo equipment for students who are deaf or hard of hearing);
- making more easily accessible course material available;
- making special computer facilities available (such as voice recognition or speech synthesis software);
- making a separate distraction-free room available for a student to take an examination;
- making a quiet room available.

IMPLEMENTATION REGULATIONS
(IR)

(see Article 7.13 of the Higher Education and Research Act)

2014-2015

MASTER'S DEGREE PROGRAMME
in
Systems Engineering, Policy Analysis and

Management (SEPAM)

DELFT UNIVERSITY OF TECHNOLOGY

Article 1   Introduction

The implementation regulations of the Teaching and Examination Regulations, hereinafter referred to as the implementation regulations, form an integral part of the Teaching and Examination Regulations.

Article 2   Master programme SEPAM composition

1. The master's programme SEPAM, 120 EC, consists of the following components:
   a. compulsory courses and projects, 78 EC as laid down in Article 3, Sections 2 and 4.
   b. domain related courses, 27 EC as laid down in Article 3, Sections 3 and 5.
      Students choose at least one out of four domains:
      - Information & Communication
      - Transport & Logistics
      - Energy & Industry
      - Built Environment & Spatial Development
   c. a specialisation, 15 EC as laid down in Article 3, Section 7
      Students choose a specialisation ('model specialisation') from:
      - Innovation Management and Entrepreneurship (+ annotation, see Article 5)
      - ICT Management and Design
      - Infrastructure and Environmental Governance (+ annotation, see Article 5)
      - Economics and Finance
      - Modelling, Simulation and Gaming
      - Supply Chain Management (not for SEPAM T&L-students)

   These specialisations will take place with sufficient participation only

2. The master's programme SEPAM, track Information Architecture, 121 EC, consists of the following components:
   a. compulsory courses and projects, 106 EC as laid down in Article 4, sections 2 and 3.
   b. a specialisation, 15 EC as laid down in Article 4, section 4.
      Students choose a specialisation as listed in Section 1 under c.

3. The student may opt for the following annotation programmes of 15 credits as laid down in Article 5:
   - Technology in Sustainable Development
   - Entrepreneurship
   - Infrastructure and Environmental Governance.

4. The student may be eligible for a special individual programme of 20 credits on top of the master's degree programme:
   - Honours Programme Master, as laid down in Teaching and Examination Regulations, Article 8a.

5. SEPAM and Harbin exchange programme.
   Students can take courses at the School of Management, Harbin Institute of Technology (HIT). The nature and content of the programme will be placed on the TMP-website->Student Portal-> MSc EPA->MSc EPA programme.

6. Some of the courses and projects have prerequisites. The prerequisites are mentioned in the digital study guide. See article 5 of these Implementation Rules for the prerequisites of SPM5910.

7. Several courses and project include skills. Skills will be graded by either pass or fail. No credits are linked to the skills, however, all skills must be passed in order to be able to graduate.

8. The master programme cannot contain electives from a bachelor programme.

9. Students who are interested in doing an external project can only do so outside the regular study programme, and not by replacing the mandatory course modules. Any exceptions to this rule have to be sent for approval to the Board of Examiners. In exceptional cases the external project can replace domain modules (9 EC), using course code spm5931 (internship – 10 EC). The domain modules will then consist of 10 EC. Applications to the Board of Examiners will have to be supported by a strong motivation.
   Students doing an external project will have to meet the following requirements (see also the studyguide for the requirements of course spm5931):

- Students are required to apply for approval to the Board of Examiners in advance
- One of the TBM examiners is involved in the project from start to finish
- An external examiner will be appointed
- The external project will be finalized with a written report
- The external project will be assessed by the TBM examiner by filling out the required assessment form
- Students are required to remain registered as Master student at TU Delft during the entire project.

10. Optional subjects may not overlap significantly in terms of content with any other unit already included in the study programme of the student concerned. In the event of doubt, the Board of Examiners decides.

11. A yearly list of rules and regulations concerning (specialisation) electives "Course and Examination Regulations Service Teaching" is published on the TPM- website-> Student portal -> MSc Sepam -> Rules and guidelines -> Course and examination regulations.

12. Any changes made to the examination programme should be presented to the Board of Examiners.

Article 3   Master programme SEPAM specification

1. Students from the BSc-TB programme choose the corresponding domain (as mentioned in Article 2, Section 1 under b) they completed during their BSc-TB programme.
   Students from another BSc programme must choose one out of four domains as mentioned in Article 2, Section 1 under b. They do so in consultation with the study counsellor.
   In both cases the domain choice stays in principle fixed for the duration of the SEPAM programme.

2. The first year master's programme SEPAM consists of compulsory courses and projects and domain related courses. The second year master's programme SEPAM consists of compulsory courses and projects, domain related courses and specialisation courses.

3. **First year compulsory programme**
   The first year consists of the following compulsory courses and projects:

SPM4111	Introduction to Designing Multi-actor Systems (2 EC)
SPM4115	Ethical Aspects of Design and Management of Technology (3 EC)
SPM4123	Designing Multi-actor Systems from an Engineering Perspective (8 EC)
SPM4133	Designing Multi-actor Systems from an Actor Perspective (8 EC)
SPM4142	Multi-actor Systems Design: an Integrated View (3 EC)
SPM4416	Strategic Management of Large Engineering Projects (6 EC)
SPM4423	Legal Aspects of MAS Design (5 EC)
SPM5920	SEPAM Design Project (7 EC)

   These courses and projects include the following skills:
SPM7010	Creativity and Communication
SPM7020	Management and Negotiation
SPM7030	Interdisciplinary Collaboration
SPM7040	Collective Reasoning
SPM7050	Critical Reading
SPM7060	Advanced self-reflection and communication skills

4. **First year domain programme**
   Students choose at least one out of fours domains as mentioned in Article 2, Section 1 under b. The domains consist of the following courses:

   Built Environment & Spatial Development
SPM4710	Design of urban concepts (4 EC)
SPM4720	Design of Housing Programs (5 EC)
SPM4730	Strategies in Urban Restructuring (4 EC)
SPM4740	Value Capturing in Land Management (5 EC)

   Energy & Industry
SPM4510	Design of systems in energy & industry (6 EC)

SPM4520	Electricity and gas: market design and policy issues (3EC)
SPM4530	Agent Based Modelling of Complex Energy and Industrial Networks (4 EC)
SPM4540	Technology & Economy of Future Energy Systems (5 EC)

Information & Communication
SPM4340IA	Design of Innovative ICT-infrastructures and Services (6 EC)
SPM4430	ICT Infrastructures Architectures (3 EC)
SPM4440	(r)evolution in ICT-infrastructures (4 EC)
SPM4450	Fundamentals of Data Analytics (5 EC)

Transport & Logistics
SPM4612	Statistical Methods for Behavioural Analysis
SPM4621	Supply Chain Analysis and Engineering (6 EC)
SPM4631	Transport Policy (6 EC)

5. **Second year compulsory programme**
   The second year consists of the following compulsory courses and projects:

   | SPM5905 | SEPAM Thesis Project Definition (6 EC) |
   | SPM5910 | SEPAM Master Thesis Project (30 EC) |

   This includes the following skill:
   | SPM7070 | Networking |

6. **Second year domain programme**

   The domains consist of the following courses:

   Information & Communication
   | SPM5440 | Cyber Security Essentials (4 EC) |
   | SPM5430 | Service Systems Engineering (5 EC) |

   Transport & Logistics
   | SPM5610 | Planning and design of multi-modal infrastructure networks (5 EC) |
   | SPM5620 | Design and management of multi-modal logistics chains (4 EC) |

   Energy & Industry
SPM9539	Economy, Ecology and Technology of Industrial Networks (3 EC)
SPM5520	Engineering Optimization in Energy and Industry (3 EC)
SPM5530	Systems Innovation in Energy and Industry (3 EC)

   Built Environment & Spatial Development
   | SPM9750 | Environmental Sustainability in the Built Environment (4 EC) |
   | SPM5710 | Integrated Regional Development (5 EC) |

7. **Second year specialisation programme**
   Students choose a specialisation as listed in Article 2, Section 1 under c. These specialisations will take place with sufficient participation only.
   Students following the domain Transport & Logistics cannot choose the specialisation Supply Chain Management.

   Students who intend to study abroad and students that start the programme in the second semester will have to compose a free specialisation, to be approved by the Board of Examiners

Article 4   Master programme SEPAM, track Information Architecture (IA) specification

1. Information Architecture (IA) is a multidisciplinary master's degree track. It is a collaborative programme of the Faculty of Electrical Engineering, Mathematics & Computer Science (EEMCS) and the Faculty of Technology, Policy and Management (TPM).
   The first year master's programme SEPAM, track IA consists of compulsory courses and projects. The second year master's programme SEPAM, track IA consists of compulsory courses and project and specialisation courses.

2. **First year programme SEPAM IA**
   The first year consists of the following compulsory courses and projects:

SPM4111	Introduction to Designing Multi-actor Systems (2 EC)	
SPM4115	Ethical Aspects of Design and Management of Technology (3 EC)	
SPM4123	Designing Multi-actor Systems from an Engineering Perspective (8 EC)	
SPM4133	Designing Multi-actor Systems from an Actor Perspective (8 EC)	
SPM4142	Multi-actor Systems Design: an Integrated View (3 EC)	
SPM4340IA	Design of Innovative ICT-infrastructures and Services (6 EC)	
SPM4416	Strategic Management of Large Engineering Projects (6 EC)	
SPM4430	ICT Infrastructures Architecture (3 EC)	
SPM4450	Fundamentals of Data Analytics (5 EC)	
SPM5920IA	IA Design Project (6 EC)	
IN4315	Software Architecture (5 EC)	
IN4325	Information Retrieval (5 EC)	

   These courses and projects include the following skills:
SPM7010	Creativity and Communication
SPM7020	Management and Negotiation
SPM7030	Interdisciplinary Collaboration
SPM7040	Collective Reasoning

3. **Second year compulsory programme SEPAM IA**
   The second year consists of the following compulsory courses and projects:

SPM5430	Service Systems Engineering (5 EC)
SPM5905	SEPAM Thesis Project Definition (6 EC)
SPM5910	SEPAM Master Thesis Project (30 EC)
IN4252	Web Science & Engineering (5 EC)
	Specialisation (15 EC)

   This includes the following skill:
   SPM7070   Networking

4. **Second year specialisation programme**
   Students choose a specialisation as listed in Article 2, Section 1 under c. These specialisations will take place with sufficient participation only.
   Students who intend to study abroad and students that start the programme in the second semester will have to compose a free specialisation, to be approved of by the Board of Examiners.

5. Students can start the SEPAM IA track in February. The courses are the same as in the regular IA programm

Article 5   Annotations

1. Students who are interested in entrepreneurship can opt for the Master Annotation Entrepreneurship programme, which trains students to become entrepreneurial.
The examination programme for students who have opted for this annotation must at least include the following:
*   WM4001TU Entrepreneurship Annotation Week (2 EC)
*   a coherent set of courses in the field of entrepreneurship. The set should be composed in consultation with the Delft Centre for Entrepreneurship (DCE). It amounts up to 13 ECTS.
*   extra attention to entrepreneurship, on top of regular graduation project activities, for example by writing a business plan or doing market research. For this extra effort DCE has formulated objectives and final attainment levels on which the extra part will be assessed.

An extra member will be added to the graduation committee who will supervise the student with regard to entrepreneurship. He/she should have expertise in the field of entrepreneurship and preferably be related to the TPM faculty. The additional member together with the DCE decides whether the annotation is granted.

2. Students who are interested in potential employment in public or private organisations which deal with issues related to infrastructures and the environment can opt for the Infrastructure and Environment (I&E) annotation. The annotation is offered in cooperation with the Dutch Ministry of Infrastructure and the Environment. The examination programme for students who have opted for this annotation must at least include the following:

*   SPM9160 Infrastructure and Environmental Governance (3 EC).
*   a minimum of 12 EC technical courses which are complementary to the core curriculum of the student. The student chooses a relevant theme and selects technical courses that fit within this theme given their (domain) background in consultation with the annotation coordinator.
*   a project (7 EC) related to the selected theme . This project concerns a current realistic issue from the sector and is supervised by the TU Delft as well as by a supervisor from the Ministry of I&E.
*   an I&E related graduation project (30 EC). The graduation project is carried out externally in an I&E related organisation (or internally on a relevant subject but with an external committee member). There is a list of organisations a student may choose from available at the annotation coordinator.

3. Students who are interested in sustainable development might receive an annotation in Technology in Sustainable Development (TiSD) besides their SEPAM MSc Degree. The examination programme for students who have opted for this annotation must at least include the following:
*   WM0939TU Engineering for Sustainable Development (5 EC).
*   Subjects within or outside the realm of the programme adding up to a total of at least 10 EC to be selected from the two clusters:
    -   design, analysis and tools
    -   organisation and society.
    At least 3 EC should derive from each cluster.
*   The graduation work must focus on the topic of sustainable development. The referent will test the hypothesis of the graduation project and the way in which it has been tackled against the extent to which sustainable development issues have been integrated into the project.

Article 6   Master Thesis Project

1. A student can start the Master Thesis Project when all other study units of the curriculum have been completed.
2. If the requirement in subsection 1 has not been met, the student can be admitted to the graduation work only with the permission of the Board of Examiners. The student can only apply for this permission when the Master Thesis Preparation module has been completed and less than 10 EC of the curriculum remain. The Board of Examiners requires a positive advice from the academic counsellor.
3. The formation of the student's assessment committee is described in the Rules and Regulations of the Board of Examiners, Article 27 (TPM website ->Studentportal ->MSc MoT ->Rules and Guidelines TPM).

Article 7   Confidentiality of thesis and internship

Regarding possible confidentiality of a student's thesis and all external projects, the following rules apply:

1. Graduation presentations are public.

2. Theses and external project reports are public, unless companies/institutions, in writing and with motivation, request confidentiality because of sensitive information. A thesis/report can be put under embargo for a maximum of one year. If a company requests a longer period, company and student can agree on a separate public version of the thesis/report.

3. Lecturers, as reviewers of the thesis/report, always have access to all information necessary for an adequate evaluation of the thesis/report.

4. In case of sensitive information, lecturers may sign a declaration of confidentiality, for which a time limit can be set.

5. Theses reports (including confidential parts) should be accessible to members of the exam (graduation) committee and a visitation committee, possibly after signing a declaration of confidentiality.

Article 8   Transitional regulations

Information & Communication
SPM5440 Cyber Security & Warfare (4 EC) is replaced by SPM5440 Cyber Security Essentials (4 EC) same course, other title.

Transport & Logistics
SPM4611 Transport and Logistic Systems from an Engineering and Actor Perspective (6 EC)
2014-2015 Two examinations for SPM4611. SPM4611 will be offered in 2014-2015 (contact the module manager M. Ludema). Replaced by SPM4612 Statistical Methods for Behavioural Analysis (6 EC).
2015-2016 Two examinations for SPM4611.

Article 9   Entry into force

This ruling will come into effect on 1 September 2014.

Drawn up by the dean of the faculty on 29 August 2014.

Appendix 1: Admission requirements master programme SEPAM

A programme admission committee will evaluate each individual application to decide whether the applicant can be admitted. Students always need permission from the admission committee and can never be admitted directly to the Master's programme based on the requirements, except for students holding a SEPAM BSc degree.

Foreign students

1. A multidisciplinary technical BSc degree of high quality and level*. The main subject focused on during the BSc phase should match the MSc degree course the student intends to pursue at the TPM faculty of TU Delft. If there are small deficiencies, the admission committee might decide that the student should take several courses in addition to the SEPAM MSc. The free elective part of the MSc programme can be used for these courses.
2. A Grade Point Average (GPA) for the BSc study of at least 75% of the scales maximum.
3. Proof of English language proficiency**:

   - A TOEFL *** (Test of English as a Foreign Language) score of at least 90 (internet based TOEFL). Please note that we only accept the TOEFL internet based test, **or**
   - IELTS *** (academic version) overall Band score of at least 6.5, **or**
   - have passed the University of Cambridge 'Certificate of Proficiency in English' or the University of Cambridge 'Certificate in Advanced English'.

   Nationals of the People's Republic of China please note: You need a 'NESO-certificate' to apply for TU Delft's MSc programmes.

Please note that if you are in the process of obtaining your BSc degree, you may apply for admission to an MSc programme at TU Delft. TU Delft may conditionally admit you, based on your transcripts and detailed information about the curriculum, relevant research and the expected date of graduation. The conditional admission letter will include the deadline date for obtaining your degree.
** *Please note that exclusively nationals from the USA, U.K., Ireland, Australia, New Zealand and Canada are exempted from the English test requirement.*
*** *As the whole process of collecting information, registering for the tests and receiving the test results may take several months, we advise you to register for the IELTS or TOEFL tests between September and December.*

Dutch Academic students

1. Students with a relevant multidisciplinary engineering degree* such as Industrial Engineering & Management may enter the programme directly. Students holding a BSc degree in systems engineering ('Technische Bestuurskunde') from Delft University of technology are automatically admitted. If there are small deficiencies, the admission committee might decide that you should take several courses in addition to the MSc SEPAM programme. The free elective part of the MSc programme can be used for these courses. The main subject focused on during your BSc phase should match the MSc degree course you intend to pursue at the TPM faculty of TU Delft.
2. Students holding a monodisciplinary technical BSc degree or a BSc degree in engineering or natural sciences (or equivalent) of high quality and level need to successfully complete the SEPAM minor (30 EC). The courses in the SEPAM minor may vary depending on the BSc degree.

Please note that if you are in the process of obtaining your BSc degree, you may apply for admission to an MSc programme at TU Delft. TU Delft may conditionally admit you, based on your transcripts and detailed information about the curriculum, relevant research and the expected date of graduation. The conditional admission letter will include the deadline date for obtaining your degree.

Dutch University of Engineering students

1. An interdisciplinary technical Bachelor degree* of high quality and level. The main subject focused on during the Bachelor phase should match the MSc degree course you intend to pursue at the TPM faculty of TU Delft.

2.

Background	Conditions for admission
Grade point average > 7 within 4 years and final assignment or thesis work > 7	Admission to the bridging programme (after the permission from selection committee)
Grade point Average < 7	Will not be admitted
Finished bridging programme during HBO Bachelor	The selection committee may decide for immediate admission

If admitted, you have to follow a bridging programme of 30 EC. There are two options: courses are distributed over one year with a workload of 20 hours a week, or scheduled as a half-year full-time programme. In some cases, this bridging programme can be taken as a minor embedded in your Bachelor's programme.

* Please note that if you are in the process of obtaining your Bachelor degree, you may apply for admission to an MSc programme at TU Delft. TU Delft may conditionally admit you, based on your transcripts and detailed information about the curriculum, relevant research and the expected date of graduation. The conditional admission letter will include the deadline date for obtaining your degree.