

Faculty of Science, Leiden University
and
Faculty of Applied Sciences, Delft University of Technology

Master's Programme Industrial Ecology
Course and Examination Regulations

31 August 2015 to 31 August 2016

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These Course and Examination Regulations have been drawn up in accordance with Section 7.13 of the Higher Education and Research Act. The Faculty Board will evaluate these Regulations on a regular basis, as laid down in Section 7.14 of said Act. Section 9.18 of said Act describes how the Regulations are to be implemented and the Faculty Board shall act in accordance therewith.

Section 1 – General provisions

Article 1.1 – Applicability of the regulations

These Regulations apply to the teaching and Master's degree audits in relation to the Industrial Ecology Master's programme that is provided by the Faculty of Science at Leiden University and the Faculty of Applied Sciences at Delft University of Technology, referred to hereinafter as 'the faculties'. The Faculty of Science at Leiden University is responsible for coordinating the joint programme.

Article 1.2 – Definitions

The definitions used in these Regulations are the same as those used in the Higher Education and Research Act, insofar as said definitions appear in said Act.

In these Regulations, the following definitions shall apply:

- a. Institutions: Leiden University and Delft University of Technology;
- b. Faculty Board: the Faculty Boards of the Faculty of Science of Leiden University and the Faculty of Applied Sciences of Delft University of Technology take joint decisions on the structuring of the programme, and for the purpose of the programme are considered as one Faculty Board;
- c. Board of Examiners: the board of examiners of a programme, appointed in accordance with Article 7.12a of the Act;
- d. Board of Admissions: the committee that, under the aegis and on behalf of the Faculty Board, and in accordance with the admission requirements, advises which students are to be admitted to the programme
- e. the Act: the Higher Education and Research Act, and as amended since its introduction;
- f. Appendices: the Board of Examiners' Implementation Regulations and Rules and Guidelines that go with the Course and Examination Regulations;
- g. Implementation Regulations: Implementation Regulations of the Industrial Ecology Master's programme;
- h. Rules and Guidelines: Rules and Guidelines of the Board of Examiners;
- i. the Programme: the Master's programme as meant in Article 7.13a, paragraph 1 sub b of the Act;
- j. Student: anyone who is enrolled at Leiden University and Delft University of Technology for the purpose of studying and/or for taking examinations and Master's degree audits for the Industrial Ecology programme;
- k. Components: a study unit or course in the programme, as meant in the Act;
- l. Curriculum: the entirety of study units that make up the study programme for the Master's degree audit;
- m. Practical course: a practical exercise as meant in Article 7.13 of the Act, in one of the following forms:
 - making a Thesis Research Report;
 - giving a lecture or oral presentation;
 - writing a thesis;

- performing an assignment, a test design or a programming assignment;
 - performing a research assignment;
 - conducting a literature study;
 - doing an internship;
 - taking part in field work or an excursion;
 - conducting tests and experiments;
 - taking part in any other educational activity that is aimed at attaining particular skills;
- n. Examination or Test: an examination or test of the knowledge, understanding and skills of the student in relation to a particular study unit, as well as the assessment of said examination or test by at least one examiner designated for the purpose by the Board of Examiners;
- o. Examiner: the person designated by the Board of Examiners to administer examinations, in accordance with Article 7.12 of the Act;
- p. the Leiden University Register of Study Programmes: the register of programmes provided by the university, under the responsibility of the Executive Board;
- q. the Delft University of Technology Register of Study Programmes: the register of programmes provided by the university, under the responsibility of the Executive Board;
- r. ECTS: credits in accordance with the European Credit Transfer System, where an ECTS credit is worth 28 hours' of study;
- s. Prospectus: the prospectus for the programme mentioned in Article 1.1., containing specific information for the Master's programme, including the curriculum, as laid down by the Board of Examiners for students commencing the Master's programme in the academic year to which the prospectus applies.

Article 1.3 – Code of Conduct regarding ICT

The Leiden University Code of Conduct for Teachers and Students in ICT supported Education [*Gedragcode docenten en studenten binnen ICT en onderwijs*]¹ shall apply to the programme and its courses.

¹. The Code of Conduct for Teachers and Students in ICT supported education [*Gedragcode docenten en studenten binnen ICT en onderwijs*] was adopted by the Executive Board on 30 June 2005 and can be found at the following website: www.regulations.leiden.edu/education-students/code-of-conduct-in-ict-supported-education.html

Section 2 – Description of the programme

Article 2.1 – Purpose of the programme

To enable graduates to operate independently in the professional field, and to make them eligible for admission to a PhD programme. The programme meets the requirements in terms of structure, achievement levels and other quality aspects as laid down in the Leiden University Register of Study Programmes and the Delft University of Technology Register of Study Programmes. The Master's programme is intended to enable students:

1. to acquire scientific knowledge, understanding and methodological, technical and communication skills in the programme field;
2. to acquire an academic mindset, with a critical, scientific and creative way of thinking, awareness of ethical and social aspects in relation to their own research, and an understanding of the professional field and of the consequences of their own actions in that field;
3. to prepare for an academic career and further education, in particular a PhD programme;
4. to prepare for a career in society.

Article 2.2 – Exit qualifications

The specific exit qualifications within the general objectives of the programme, as formulated in Article 2.1 and 2.2 of the Course and Examination Regulations, read as follows. Graduates from the master's programme Industrial Ecology will:

1. have a general knowledge of the main disciplines relevant to Industrial Ecology, i.e. environmental science, process technology, product design, economics and organisational management;
2. have a thorough knowledge of the Industrial Ecology field, including its theories and concepts, its methodologies and its object, the technosphere;
3. have a thorough knowledge of and insight into the main sustainability issues, their causes in society and the technosphere, the currently available Industrial Ecology solutions, their potential and limitations;
4. have an understanding of the societal sustainability debate regarding the three dimensions (people, planet, and profit) and the ability to contribute to this debate, relating Industrial Ecology expertise to input from the natural, technical, and social sciences;
5. have the ability to identify issues and to generate new solutions based on their knowledge of Industrial Ecology;
6. be capable of using, improving, and applying the methods, techniques and tools of Industrial Ecology, including systems analysis, life cycle assessment, substance and materials flow analysis, energy balances, input-output analysis, stakeholder analysis and involvement, transition management and system dynamics, agent based modelling, and the implementation, monitoring and management of innovation processes;
7. be able to contribute to the technological design of industrial systems, industrial processes and consumer products, aiming at environmental protection and sustainability, and to identify threats and opportunities of current and new processes for life cycle stages like the extraction of raw materials, production, consumption, and waste treatment;

8. have acquired general academic skills, including the usage of research methods and tools such as statistical data analysis, collecting and interpreting data, modelling techniques, critical application and evaluation of theories, concepts, and principles;
9. be capable of conceiving and conducting research in the multi-disciplinary field of Industrial Ecology;
10. be capable of analysing and synthesising information, including research results, and of presenting them using text, presentation techniques, and graphic tools to both specialist and non-specialist audiences.

Article 2.3 – Type of programme

This is a full-time programme.

Article 2.4 – Study load

The study load of the programme is 120 ECTS.

Article 2.5 – Start of the programme

The programme starts twice a year, on 1 September and 1 February.

Article 2.6 – Language

In compliance with the Code of Conduct regarding Foreign Languages [*Gedragscode Voertaak*²] the language of instruction and examination in the programme is English. Students are expected to have an adequate command of the language(s) of instruction of the programme.

Article 2.7 – Rules and Guidelines relating to the Master's degree audit

The requirements set by the Board of Examiners in relation to the Master's degree audit are laid down in separate regulations, hereinafter referred to as the Rules and Guidelines of the Board of Examiners of the Industrial Ecology Master's programme.

Article 2.8 - Quality

The programme has been accredited by the Accreditation Organisation of the Netherlands and Flanders and meets the national and international quality requirements and quality standards laid down in relation to teaching in the Leiden University Register of Study Programmes and the Delft University of Technology Register of Study Programmes.

². The Code of Conduct regarding Foreign Languages [*Gedragscode voertaak*] was adopted by the Executive Board on 11 July 2002 and can be found at the following website:
www.reglementen.leidenuniv.nl/legacy/language_of_instruction.pdf

Section 3 – Teaching

Article 3.1 – Study programme

The Master's study programme consists of compulsory and optional components. The study programmes for every specialisation/profile proposed by the Board of Examiners and confirmed by the Faculty Board are given in the Implementation Regulations.

Article 3.2 – Scope

The scope of every component of the programme is stated in terms of its study load, consisting of at least one whole ECTS, or a multiple of one.

Article 3.3 – Level

The level of every compulsory component of the programme is given in the Implementation Regulations; the method by which this is determined is the one used by the Leiden University Register of Study Programmes.

Article 3.4 – Optional components

For the optional components as meant in Article 3.1, the following shall apply:

1. the choice of optional components must be approved by the Board of Examiners;
2. such approval should be given before the student begins the optional component in question.

The optional components shall be taken at the institutions where the programme is given, or at another university in or outside the Netherlands.

Article 3.5 – Prior knowledge

If it is required that a student has successfully completed certain components of the curriculum in order to participate in certain other components, this is stated in the Implementation Regulations.

Article 3.6 – Participation in a study component

If there is a limited number of places for any study component, priority shall be given to students in the order in which they enrolled for it, although students for whom participation in the component is compulsory in their programme shall be guaranteed a place. If attendance at any study component is compulsory, this is stated in the Implementation Regulations

Article 3.7 – Laboratory courses

Laboratory courses in the sense of Article 1.2, paragraph g of these regulations that form part of the programme curriculum are described in greater detail in the Implementation Regulations. Completing a laboratory course to a satisfactory level is the equivalent of passing an examination in the sense of Article 7.10 of the Act.

Article 3.8 - Recording Lectures

Students are not allowed to make audio or video recordings of lectures without explicit prior permission from the relevant lecturer. Should such permission be

granted, the student is only legally allowed to use the recording for his/her own use; all forms of duplication or publication of the recordings are prohibited.

Section 4 – Testing

Article 4.1 – Test moments

Students shall be given at least two opportunities in every academic year to take examinations. As far as practical courses are concerned there will be only one opportunity every academic year, unless the examiner decides otherwise. If a student requires an extra opportunity, a request for an exception may be submitted to the Board of Examiners.

Article 4.2 – Compulsory sequence

Examinations for some components (stated in the Implementation Regulations) may only be set if certain other components have been successfully completed.

Article 4.3 – Testing

1. The course guide states whether examinations are to be written, oral or taken with the help of an aptitude test. Where this information is not given in the course guide, students shall be notified of the type of examination for the component in question no later than the start of the said component.
2. Any examination as previously described has to be reviewed at forehand by another staff member than the appointed examiner of the study component. The Board of Examiners and the examinees have to be informed about the two persons who have prepared and reviewed the examination
3. In exceptional cases the Board of Examiners may give its permission, at a student's request, for an examination to be taken in a way other than that previously laid down.
4. Students with a disability may take examinations in a manner that has been adjusted to their particular disability, in order to accommodate their disability as much as possible. These adjustments may not affect the quality or level of difficulty the examination. If necessary, the Board of Examiners will seek expert advice, as provided for in the Protocol on Studying with a Disability, before reaching a decision.
5. Students shall be assessed individually in the case of presentations, research, reports or other study activities that are performed as part of a group.

Article 4.4 – Oral examinations

1. Oral examinations shall be held with one student at a time, unless the Board of Examiners has determined otherwise.
2. Oral examinations shall not be public, unless the Board of Examiners or examiner in question has decided otherwise (in special cases) or unless the student objects thereto.

Article 4.5 – Assessing examinations

1. The examiner shall make his or her assessment of a written or other form of examination known within fifteen working days after the date on which said examination was taken, and shall provide the graduate school office of the Faculty of Science of Leiden University with the information needed for giving the student concerned the written confirmation of the assessment.
2. The examiner shall make his or her assessment of an oral examination known immediately after the end of said examination and give the student a written statement of the result.

Article 4.6 – Assessment of Master's Thesis Research Report

Master's Thesis Research Projects are always assessed by a primary and secondary examiner, both of whom shall be connected to one of the institutions. The primary examiner shall be directly involved with the day-to-day supervision of the student, and the secondary examiner shall be from a different research group to that of the first examiner and shall not be directly involved with the day-to-day supervision of the student. Further detailed procedures are given in the Thesis Research Protocol.

Article 4.7 – Period of Validity of Results

Every examination and exemption granted has a validity period of five years. The Board of Examiners may, in accordance with the guidelines it has formulated, and at the request of the examination candidate, extend the period of validation

Article 4.8 – Access to Marked Examination Scripts and Evaluation

1. Students are entitled to view their work that has been assessed for at least thirty days after the announcement of the result of the written examination in question.
2. During the period referred to in the first paragraph, the questions and assignments of the examination in question, as well as the norms on which they were assessed (if possible), are available to any interested party.
3. A follow-up interview may be arranged at the student's request; this option shall be made available at the time of the announcement of the examination results.
4. Follow-up interviews shall be held at a time and place determined on behalf of the Board of Examiners.
5. Students shall be informed about the objections procedure in relation to the written or electronic announcement of the assessment of an examination.

Article 4.9 – Exemptions

At the student's request and after consultation with the examiner involved, the Board of Examiners may grant the student exemption from one or more examinations or practical courses under one of the following conditions:

- The student has successfully completed, at a university or an institute of higher professional education, one of a programme's components that is similar in content and level to the component for which the student requests exemption;
- The student has demonstrated, through relevant work or professional experience, sufficient skills and knowledge in relation to the component.

Article 4.10 – The Final Examination

1. The student is awarded a diploma by the Board of Examiners when all tests have been passed. Furthermore, the student must have earned a bachelor's degree as referred to in Article 5.1 or possess proof of admission as referred to in Article 5.2.

Article 4.11 – Degree

1. The degree of Master of Science in Industrial Ecology is awarded to those who have passed the final examination of the programme.
2. A diploma supplement making explicit reference to the partnership of Leiden University and Delft University of Technology shall be added to the degree certificate, in accordance with the guidelines of the Leiden University Register of Study Programmes.

Article 4.12 Distinctions

1. The Board of Examiners may attach a distinction to the result of a final examination.
2. The distinction is determined on the basis of the weighted average of all the components, with the exception of the components for which an exemption was granted and components for which the student only obtained proof of attendance.
3. The weighted average of all grades is determined by multiplying the number of study credits (EC) of each component by the highest grade awarded for this component, then adding these up, and finally dividing the result by the number of study credits obtained.
4. The diploma and the diploma supplement will contain the 'cum laude' distinction if the following conditions are met:
 - All courses were completed with a minimum grade of 7.0.
 - The weighted average of the student is 8.0 or higher.
 - The grade for the master's thesis is 8.5 or higher.
 - The master's final examination was completed within three years.
5. The diploma and diploma supplement will contain the 'summa cum laude' distinction if the following conditions are met:
 - All courses must be completed with a minimum grade of 8.0.
 - The student must have a weighted average grade of 9.0 or higher.
 - The master's thesis was graded 9.0 or higher.
 - The master's final examination was completed within three years.
6. Other considerations may play a role in determining whether a student is awarded a distinction. Examples include such aspects as the development of the student throughout his/her study programme, possible exceptional performances on the part of the student in completing the final assignment or thesis, or other relevant exceptional circumstances.
7. If a student was found guilty of fraud in the course of his or her studies, he or she will not be awarded a distinction.
8. The distinction awarded by the Board of Examiners may not deviate by more than 0.5 credits from the distinction indicated by the weighted average.

Section 5 – Admission

Article 5.1 – Admission requirements

Possession of a Bachelor's degree is required for admission to the programme, as stated in the Implementation Regulations.

Article 5.2 – Board of Admissions

The Faculty Board shall appoint a two-member Board of Admissions, one staff member from each faculty. Every registration shall bear a recommendation from the programme's Board of Admissions, which will be passed on to the relevant responsible body of the institution to which the registration applies, as stated in Article 5.3.

Article 5.3 – Admissions procedure

The Faculty Board shall admit students to the programme who fulfil the requirements in Article 5.1 and for whom the Board of Admissions has issued a positive recommendation. The Faculty Board shall issue a document to the student stating whether or not he or she has been admitted to the programme.

1. The Faculty Board may issue a conditional admissions document for the programme to any student who has completed a programme that is at least equivalent to the Bachelor's programme as meant in Article 5.1, but only if the Board of Admissions has issued a positive recommendation for the student in question.
2. The Board of Admissions shall lay down the programme admission requirements as stated in Article 5.1 and the relevant admissions procedure.
3. The admissions document as meant in the first paragraph is valid until the date stated on the document.

Section 6 – Supervision

Article 6.1 – Study progress administration

1. Students' study results are registered by the student administration of the programme, under the responsibility of the coordinating faculty.
2. The student administration shall provide students with an overview of the results they have achieved so far on request, at any time.
3. If, in the view of the programme department, any student has fallen significantly behind schedule in his or her studies, the department shall alert the student of the possibility of seeking support in drawing up a study schedule.

Article 6.2 – Supervision

The department shall arrange the supervision of the students and their introduction to their supervisors.

Article 6.3 – Supervision in the Master's Thesis Research Project.

Together with the Master's Thesis Research Project first examiner, students shall draw up a timetable for conducting research and writing their Master's Thesis Research Report. The timetable shall be based on the study load that has been laid down for this component in the Implementation Regulations. The timetable shall also include the frequency of the supervision and what form the supervision is to take.

Article 6.4 – Professional Sports

Students who play sports at a professional level are offered the opportunity to adjust their study programmes to their sporting activities wherever possible. For the purpose of determining which students fall into this category, the programme uses the guidelines of the Executive Board of Leiden University.

Article 6.5 – Other cultural and social activities

Students who contribute to cultural or social activities which in the opinion of the Faculty Board are similar to the activities as referred to in 6.4 are offered the opportunity to adjust their study programmes to their activities wherever possible.

Article 6.6 – Disability or Chronic Illness

Where possible, students with a disability or chronic illness are offered the opportunity to adjust their study programmes in accordance with the limitations resulting from their disability or illness. These adjustments will be made as much as possible in accordance with the limitations resulting from their disability or illness but may not affect the quality or level of difficulty of a course unit or the examination programme.

Article 6.7 – Spending time abroad; internships

Any student who decides to spend time abroad to study should first request approval from the Board of Examiners for their Individual Study Programme together with this application. For students who as a result of a stay abroad or traineeship may suffer from a demonstrable delay in their studies, measures will be taken to limit the delay. Furthermore, approval in advance is also needed from the International Office of the Faculty of Science of Leiden University.

Section 7 – Transitional Provisions

Article 7.1 – Provisions concerning Students Previously Enrolled in the Programme

For students who were newly enrolled in the programme no longer than three years prior to the date these Regulations came into force, Chapter 3 of the Course and Examination Regulations remains applicable as they were formulated at the time of first enrolment.

Article 7.2 – Replacement of old courses

In case components as referred to in Section 3 of the Course and Examination Regulations applicable pursuant Article 7.1 are no longer on offer, the board of examiners will indicate components to replace them. If necessary, components may be indicated that are offered by another institution.

Section 8 – Final provisions

Article 8.1 – Amendments

1. Amendments to these regulations shall be confirmed by both faculty boards, as mentioned in Article 1.1, following approval by both faculty councils meeting separately, in accordance with the provisions in Article 9.38 subsection b. of the Act.
2. Amendments to these regulations that apply to a particular academic year must be in place and be published in the set manner before the start of said academic year. Any deviations herefrom shall be permitted only if a rapid introduction of such an amendment is strictly necessary and provided the interests of the students cannot reasonably be said to be harmed.
3. No amendment may influence to the detriment of students any decision taken by the Board of Examiners within the meaning of these Regulations with regard to students.

Article 8.2 – Publication

1. The programme department shall ensure due publication of these Regulations, their Implementation Regulations, and Rules and Guidelines that have been laid down by the faculty board, and of any amendments to these documents.
2. Copies of the documents referred to in the first paragraph are available from the Student Administration, and on the internet.

Article 8.3 – Entering into force

These Regulations shall enter into force on 31 August 2015