

REGULATIONS GOVERNING THE ETSEQ Master's Thesis

v1 of 5 July 2014, relating to v7 of 1 July 2014 of the Regulations governing Theses

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v2 of 4 December 2014, School Board. Modifications

v3 of 23 October 2015, School Board of 28 October 2015 (Art. 7.6)

v4 of 7 February 2018, School Board of 12 February 2018

Preamble

Royal Decree 1393/2007, of 29 October, which stipulates the regulations governing university courses, modified by Royal Decree 861/2010, of 2 July, states that official master's courses must provide students with advanced or multidisciplinary training, oriented towards either academic or professional specialisation, or towards research activity.

Article 15.2 of Royal Decree 1393/2007 specifically states that the master's thesis (hereafter MT) must form part of the curriculum and article 15.3 refers to the writing and defence of the MT and specifies that the MT must be worth between 6 and 30 credits.

The MT must be written during the final phase of the master's course and it must demonstrate that the student has obtained the competencies associated with the MT.

The regulations governing the ETSEQ's MT expand upon the URV's general MT regulations in those aspects that are specific to the ETSEQ.

The School has established a Procedure for administering the External Practicals and Final Master's Degree Projects of courses at the ETSEQ (hereafter *ETSEQ Procedure*) which specifies how to administer the MT in accordance with these regulations. The *ETSEQ Procedure* may be obtained from the secretary's office of the School.

Article 1 Object of the MT

- 1.1 The MT is an individual and autonomous piece of work that enables student to demonstrate that they have studied and acquired the content and competencies associated with the master's degree.
- 1.2 The type of study considered suitable for an MT depends on whether the student is following the professional or research track and on the professional ambit that the master's course is aimed at. The descriptions for each master's course are provided below, as is the Course Guide.

For the Master's Degree in Chemical Engineering (hereafter MEQ), the MT must be:

An engineering project consisting of a technical assignment that would be carried out by a qualified engineer in this particular ambit. These technical assignments may be the design, calculation, assembly, operation and maintenance of equipment or processing plants, or they may be studies relating to technical, economic or other aspects of chemical and processes engineering. The objective is to demonstrate acquisition of the course competencies.

For the Master's Degree in Environmental Engineering and Sustainable Energy (hereafter MEESE), the MT must be:

An innovative project in the ambit of Environmental Engineering, Energy and Sustainability. It must be a technical work of the kind that a fully qualified engineer would produce. The project can focus on the design, calculation, assembly, operation and maintenance of technologies for the treatment of gas effluents, aqueous solutions, contaminated soils, and waste; environmental management; environmental and energy auditing; the use of tools to improve the sustainability of processes; energy integration and saving; the application of renewable energies; cleaner production; or any theme relating to Environmental and Energy Engineering. The project will have the structure of a professional project and may be related to any of the themes studied during the master's degree. The objective is to demonstrate acquisition of the course competencies.

For the Master's Degree in Thermodynamic Engineering of Fluids (hereafter METF) the MT must be:

An innovative research project in which the student conceives and analyses a new idea or modifies an existing one to develop a new process, device or product in the ambit of knowledge of the master's course. The project should contain both an experimental and a theoretical part. Students must demonstrate the acquisition of the master's competencies relating to the execution of an assignment and the presentation of results.

For the Master's Degree in Nanoscience, Materials and Processes: Cutting-Edge Chemical Technology (hereafter Nano), the MT must be:

An innovative research project conducted in a laboratory during which the student conceives and analyses a new idea or modifies an existing one to develop a new process, device or product in the ambit of knowledge of the master's course.

The project's complexity will be of professional standard and will reflect the kinds of project that students will have to deal with in their professional careers. The project must demonstrate that the student has acquired the course competencies.

For the Master's Degree in Occupational Risk Prevention (hereafter MPRL), the MT must be:

The project must reflect the knowledge required in any of the master's degree's areas of specialisation and may be either practical (directly applicable to a company or sector) or theoretical (contributing new knowledge to the corresponding area of knowledge).

For the Master's Degree in the Management of Technology Companies (hereafter MGET), the MT must be:

General project or a project in a specific area that demonstrates the student's acquisition of the knowledge and competencies taught during the master's degree. The project may be directly related to a specific business or sector or it may be a piece of original research that contributes to the body of knowledge in the area.

For the Master's Degree in Computational Fluid Dynamics (hereafter MEFCO), the MT must be:

A theoretical and/or applied piece of research related to the content of the master's degree and on a subject of the student's choice. During the MT, the student must demonstrate the acquisition of the knowledge and competencies taught during the master's degree. The objective is for the student to present and defend an innovative thesis that demonstrates that he/she has assimilated and acquired the course competencies.

1.3 MTs with the characteristics described in point 1.2 may be carried out by working groups (which may be either intra- or interdisciplinary, provided that they comply with the following conditions:

- a) The MT must contain a section that has been carried out by each student and which will feature in the report presented by the student. This section will be distinguished from the general MT conducted by the team as a whole.
- b) Each student's individual contribution must have sufficient scope and depth to allow them to be awarded an individual grade.
- c) The MT will be assessed both in terms of each student's individual contribution (which will include the section mentioned in the previous point) and each student's contribution to the joint part of the project.

1.4 The MT must meet the requirements for international accreditation that have been decided for each course and approved by the School Board and which are specified in the annex to the regulations.

1.5 The professional and research tracks of the School's master's courses and the number of credits assigned to the MT are as follows:

- MEQ (professional): 15 ECTS credits
- MEESE (professional): 18 ECTS credits
- METF (research): 18 ECTS credits
- NANO (research): 24 ECTS credits
- MPRL (professional): 9 ECTS credits
- MGET (professional): 10.5 ECTS credits
- MEFCO (research/professional): 15 ECTS credits

1.6 The MT may be carried out as part of the URV's Service Learning Programme.

1.7 The MT for professional track master's courses may be carried out at a company or institution external to the School (hereafter Company). In order to do this, students must meet the following requirements:

- a) Two thirds of the hours assigned to the MT must be spent in person at the Company (ECTSx25x2/3)
- b) The Company must assign a supervisor to the student during the latter's time at the Company. This supervisor must apply the subject's detailed supervision and assessment requirements as provided by the student's internal tutor at the URV.

1.8 The MT may be conducted in conjunction with the subject External Practicals (EP) for those master's courses that offer this option. The requirements are:

- c) The student must spend all of the hours assigned to the EP at the Company (ECTSx25).
- d) The student must spend two thirds of the hours assigned to the MT at the Company (ECTSx25x2/3).
- e) The Company must assign a supervisor to the student during the latter's time at the Company. This supervisor must apply the subject's detailed supervision and assessment requirements as provided by the student's internal tutor at the URV.

Article 2 Organisation

2.1 Each master's course will have an academic committee that will decide on all directives and academic aspects relating to the MT. The academic committee is defined in point 3 of the ETSEQ's Quality Manual and in the annual reports relating to each master's degree.

Their functions are to:

- a) Determine the internal MT administrative procedure for each master's course, in accordance with the *ETSEQ Procedure*.
- b) Manage any important incident relating to the MT at the request of the head of the MT.

For transversal aspects that affect more than one master's degree, the director of the School may constitute an expanded committee. This committee will consist of the director (acting as president) and the members of the committee for each of the master's degrees concerned. In particular, the expanded committee will:

- c) Determine the modifications to the *ETSEQ Procedure* relating to the administration of the MT.
- d) Set the criteria for implementing and evaluating the MT for external accreditation (AQU and/or international organisations).

2.2 In accordance with point 1.7 of these regulations or point 1.8 of the general regulations, if the MT is to be carried out at an external institution (usually a company), then a framework agreement must have been signed between the URV and the company. In addition to this, there must also be a specific agreement or addendum that establishes the exact conditions under which the MT will be carried out.

Article 3 Registration, defence and evaluation

3.1 The MT encompasses all of the competencies acquired over the course of the master's degree. Students who register for one-year master's courses worth 60

ECTS credits must also register for the MT at the beginning of the academic year. Part-time students may register for the MT in the second academic year.

- 3.2 For the MEQ, students must have passed all the other subjects in the master's degree before they can be pass the MT.
- 3.3 The periods for submitting, defending and evaluating the MT will be published on *Moodle* at least 60 days in advance and the coordinator of the subject will be responsible for making this public, in accordance with point 4.2
- 3.4 The MT will have a single examination session.
- 3.5 The student may request for one of the exam sessions to be brought forward or postponed in accordance with the procedure specified in the URV's Academic and Registration Regulations governing Master's Degrees.

Article 4 Responsibility and teaching load

- 4.1 The procedure for determining the coordinator of the MT is specified in the *ETSEQ Procedure*. The same document specifies the distribution of credits by the different departments involved and the administrative schedule for the subject and the professors involved.
- 4.2 The MT coordinator has the following responsibilities:
 - Completing the Course Guide and ensuring that the information therein is correct and complies with Teaching Regulations.
 - Ensuring that the work plan complies with the Teaching Regulations.
 - Publishing the MT's submission, defence and assessment dates on Moodle.
 - Holding an information session for the students to explain the MT procedure, duration and minimum number of hours.
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 - Managing the administrative structure of the MT (head of subject, tutor, administration, etc.).
 - Managing the MT application procedure.
 - Accounting for any specific conditions that may apply.
 - Publishing the information available (website, Moodle, email).
 - Ensuring that the structure, format and management of the MT comply with the quality standards specified in these regulations.
 - Providing new company contacts to the Dean's Support Office, if necessary.
 - Carrying out the duties specified in the ETSEQ Procedure.
 - Recording and signing off the students' final grades in good time. The MT coordinator is also responsible for publishing the MT Guide for the corresponding course on DocNet in time for the course registration period. The complete guide must also be available to students on *Moodle* when the course starts.
- 4.3 The maximum number of MT that a professor may tutor is based on the total number of Final Bachelor's Degree Projects and MT that are being undertaken at that the ETSEQ. A professor may tutor a maximum of 120 ECTS credits, which is based on the total number of ECTS credits corresponding to the various Final

Bachelor's Degree Projects or MTs that the professor is tutoring for each course. Thus, in general a professor may tutor up to 10 MT (10x12 ECTS credits), unless he/she is tutoring the MT for the Master's Degree in Nanoscience, for which the maximum number is 5 (5x24 ECTS credits), or unless he/she is tutoring the MPRL, for which the maximum number is 12 (12x9 ECTS credits). Any other combination may be permitted provided that the total is equal to or lower than 120 ECTS credits. In exceptional cases, however, an increase of 50% to 180 ECTS credits may be permitted.

Article 5 Supervision of assignments

5.1 Internal URV tutors must be appointed by one of the departments participating in the course to supervise the MT.

5.2 The internal tutor has the following functions:

- a) Facilitating the learning process.
- b) Reviewing and accepting or rejecting MT proposals made by students, in accordance with Article 1.
- c) Providing topics for the MT in accordance with Article 1 in cases where students have no proposal of their own.
- d) Reviewing, accepting and rejecting MT proposals from collaborating businesses in cases where the MT is carried out externally.
- e) Continuously monitoring the MT to ensure that it is progressing correctly.
- f) Informing tutors of external MTs of their responsibilities (cf. 5.3), the assessment conditions and the MT guide so that they can act accordingly.
- g) Evaluating students in order to provide regular reports the head of the MT.
- h) Applying the procedure established for collecting the information needed for the course accreditation.

5.3 If the MT is carried out in a company, the company supervisor will have the following functions:

- a) Facilitating the learning process.
- b) Continuously directing the MT to ensure that it is progressing correctly.
- c) Understanding and participating in the evaluation of the student's MT.
- d) Presenting the required report to the internal tutor on the stipulated date and in the stipulated format.
- e) Discussing with any aspect of the MT with the internal tutor, particularly in the case of disputes.

5.4 The tuition system is specified in the Guide for the MT of each course, which can be found on the subject's Moodle space.

Article 6 Assignment or choice of topics

6.1 Given the different duration, scope and objectives of each master's course, each one will have its own procedure for assigning topics that will be published in the MT Guide for that particular master's course. In all cases, the student's freedom to decide on a project for the MT will be respected. All topics must be authorised by the head of the subject. In this case:

- a) The head of the MT designates an internal tutor

- b) The internal tutor determines whether he/she has the necessary competencies to supervise the MT.
 - c) If the internal tutor deems that he/she does not have the necessary competences, he/she will inform the head of the MT so that a new internal tutor can be designated. If a competent tutor cannot be found, the head of the MT will not reject the proposed assignment.
- 6.2 If the ETSEQ is has a series of external projects that have not been assigned to any student, the procedure for assigning the projects will take into account the academic transcript of the student and the preferences of the company, in accordance with the procedure in Annex 1. In this case, the company will propose a supervisor who will act in accordance with the conditions established in points 1.7or 1.8.
- 6.3 The MT that are offered as part of the Service Learning Programme will be governed by point 6.1, is the topic has been proposed by the student, or by 6.2 if the project has been proposed by an entity external to the ETSEQ.

Article 7 Submission and defence

- 7.1 The formal regulations governing the submission of assignments are specified in the *MT Guide* for each course and in accordance with the URV's regulations governing the deposit of theses in the institutional repository.
- 7.2 The submission procedure will be specified in the *MT Guide*.
- 7.3 If the MT is external and subject to confidentiality conditions, the submission procedure will be agreed by the company and the head of the MT. The procedure may be subject to a specific confidentiality agreement. This agreement may state that:
- a) Copies of the assignment are divided into parts, one of which contains the confidential information.
 - b) The part containing the confidential information is to be returned to the company after the defence of the assignment.
 - c) The document submitted must not contain confidential data and such data may be mentioned only during the defence of the assignment.
 - d) Others

Under all circumstances, part of the information must be included in the assignment to facilitate external supervision during the periodic accreditation of the course.

- 7.4 The defence of the MT will be public and in person. It will take place before an examination panel consisting of at least one president and other members. The composition of the panels will be specified in the *MT Guide*. The panel keep a record of the assignment defence. The grade awarded by the panel is definitive and cannot be changed except in the case specified in article 7.9. The panel will be appointed by the head of the MT, who will also distribute the MT among the various MT professors, in accordance with the official exam timetable. The president of the panel will normally be a senior professor from the team of MT professors for each assignment.

- 7.5 If the MT has been carried out externally, the assignment defence may take place in private if this is provided for by the MT's confidentiality conditions. Any such private defence must first be authorised by the head of the MT.
- 7.6 The MT may be submitted in Catalan, Spanish or English and may be defended in any of these three languages. For the MEESE, MEQ, MGET i and Nano courses, the MT must be in English.
- 7.7 The MT may also be presented in French, German, Italian or Portuguese. To do this, the student must file a request with the head of the MT, who may accept or reject the request on the basis of the panel's capacity to assess an assignment submitted in one of these languages. Exceptionally, the student may request to write and defend the assignment in another language. This request may be accepted or rejected depending on the criteria applied by the head of the MT.
- 7.8 Exceptionally, the student may be permitted to defend the assignment via an online platform provided that the head of the MT deems it appropriate and it is technically feasible.
- 7.9 The student may request a review of the final grade, in accordance with the URV's Academic and Matriculation Regulations.

Article 8 Depositing the assignment and the Institutional Repository

- 8.1 All MTs must be deposited in the URV's Institutional Repository. FDMPs that are subject to a confidentiality agreement with the collaborating entity will be deposited in accordance with the specific provisions of the aforementioned agreement.
- 8.2 FDMPs that are awarded grades equal to or higher than 8 and not subject to confidentiality agreements will be made freely available for consultation by anyone who wishes to use them for teaching, research or personal study purposes.
- 8.3 The URV will specify the formal requirements for MT in relation to the Institutional Repository.

Article 9 Intellectual and industrial property

- 9.1 The intellectual or industrial property rights arising from the MT will be subject to the terms and conditions established by the current legislation.
- 9.2 In all cases, the name of the author(s), the nature of the work and the affiliation with the URV must be cited whenever any use is made of the MT.

Final provision. Entry into force

This regulation will enter into force as soon as it has been approved.

Annex 1

Adaptation of methodology linked to ETSEQ-Work Experience

MTs offered in the frame of ETSEQ-External Practicals (whether these MTs are connected or not to External Practicals) involves a series of bilateral activities between the ETSEQ and various companies. The assignation of an MT to a candidate in the frame of ETSEQ-External Practicals is subject to the procedure stipulated below in order to ensure that the companies are treated equally when the project is assigned to a given candidate, as is specified in the agreements signed between the ETSEQ and each of the companies. The procedure consists of two parts: 1) the students are pre-selected on the basis of their skills and academic merits; 2) the students are listed in order of preference by each of the participating companies. This annex describes the procedure.

The ETSEQ panel will use a pre-selection process to reduce the number of candidates who have applied to carry out an external MT at a company before passing the definitive list on for evaluation by each Company panel. The ETSEQ panel will pre-select the candidates on the basis of the information that they have submitted

- Academic transcript
- Additional information to be specified on the subject's Moodle space
- List in order of preference the projects being offered by the companies

It is assumed that M projects are on offer. During this phase, the following weightings will be applied:

- i) 60% for the academic transcript and experience in the practical application of engineering knowledge.
- ii) 40% for other social skills which will be detailed by the head of the subject in the call for applications.

Once the ETSEQ has listed the candidates in order of preference, the following method will be used to assign the MTs:

- a) Each candidate will be interviewed by 3 companies and each company will interview 3 candidates.
- b) The first candidate is assigned the first 3 companies on his/her list of preference so that the panels of these companies can evaluate the candidate.
- c) This procedure is repeated for the second and third candidates. After the third candidate, a company may have carried out its *three* assigned interviews. In this case, any subsequent candidate may no longer be interviewed by this company, which means that the candidate will be assigned the next company on their list of preference. The procedure continues in this manner.

d) Using the interviews and selection procedures that it considers necessary, the company will draw up a list of its 3 preferred candidates, which can include students who are not eligible for the company, and will send this list to the ETSEQ.

e) The ETSEQ panel will receive the companies' lists of preference and assigns the candidates on the basis of the following criteria:

i. The ETSEQ takes the first candidate on its list and checks to see which company or companies have chosen the candidate as their first option.

- If there is only one company, the candidate is automatically to that company.

- If there is more than one company, the candidate is assigned to the company that is placed highest on the candidate's list of preference.

- If there is no company, the candidate goes into the second round.

ii. The procedure is repeated for the second candidate, but without the company that was assigned the first candidate, and is repeated for all of the pre-selected candidates.

iii. The second round involves the candidates who were not assigned to a company in the first round and eliminates those companies that were assigned a candidate. The second round repeats the process used in the first round but this time for the companies' second options. A third round of assignments completes the process.

Companies may reject the pre-selected candidates that have been assigned to them. If at the end of the assignment process a company has no candidate because it has rejected the one that was assigned to it, the assignment process will be repeated on the basis of the list of preference in order to select and propose a new candidate from among the candidates in reserve (provided that there are more students than external MTs on offer).

If a company wants to interview more than 3 candidates it must inform the ETSEQ, which will take this into account when assigning the candidates.

If a company proposes more than 1 MT, each project will be treated separately during the assignment process.