

Master Degree in Electrical Energy Conversion and Power Systems Regulations for the Master Thesis.

Master Thesis Objectives

The Master Thesis (hereinafter MTh) is a Project developed by the student, involving the analysis, design and development of a given work, aimed to demonstrate the student's ability to be a qualified professional and/or researcher in the application fields of the Master Degree in Electrical Energy Conversion and Power Systems (EECPS Master Course), from the University of Oviedo.

The MTh consists on a written report and in a public oral presentation by the student; both of them must be evaluated.

The MTh is scheduled in the fourth semester of the EECPS Master Course, from February to July on the second academic year. The students of the Technical-Economic/Management strand might have carried out the internships previously. All the EECPS Master Course students (both the Technical-Economic/Management strand and the Scientific/Research strand) might do an internship simultaneously with the MTh, in any other high education institution or company among the ones that have signed the collaboration commitment with the master programme.

Given this context, it is possible to effectively carry out the MTh within the host institution or company, what is defined in the present document as External Master Thesis (EMTh.)

The topic of the MTh/EMTh can be proposed either by:

- 1.- The Academic Committee of the EECPS Master Course of the University of Oviedo.
- 2.- The student.
- 3.- An external institution, such as universities, other High Education Institution (HEI), public or private institutions, or a company.

The Advisor

The MTh must be supervised by a professor of the University of Oviedo, hereinafter the Advisor. The advisor must be a teacher of the EECPS Master Course during the edition in which the MTh is scheduled, and he is in charge of the monitoring, supervision and evaluation of the project. A scientific or technical assistant can also supervise the project, under approval by the Master Coordinator. In the case of EMTh, an individual from the host institution will be responsible of the student's supervision. This person will be the co-advisor of the MTh, and will be the contact person between the institution and the EMTh advisor (a professor at the University of Oviedo).

Project timeframe

The MTh involves 18 ECTS, and must be scheduled to last for a period from 4 to 6 months, in agreement with the ECPA Master Course syllabus. For the EMTh, the recommended timeframe is 6

months.

Assignment of Advisor and MThs

The Academic Commission of the EECPS Master Course will approve and publish, in accordance with the regulations of the University of Oviedo, a relationship of the possible topics for MThs. The assignment of the topic and the advisor will be managed by the Academic Commission, before the end of the first semester, trying to suit, as far as possible, the preferences of the students.

Supervision

Once the MTh is assigned, the advisor must establish a set of realistic objectives for the development of the project, so as to delimit the work to be done by the student as far as possible, adapting the MTh to a workload of 18 ECTS.

The MTh includes a written report. The student must schedule the needed time to write this document in the given timeframe.

In the event of EMTh, it is important that the advisor participates in the elaboration of the definition of the work, such as objectives, schedule, plan, etc. Thus, it will be easier proper evaluation of the degree of development of the work carried out by the student in later stages of the project. Both the advisor from the University of Oviedo and the student can apply for an intermediate presentation, carried out by the student, to continuously monitor the development of the project. The advisor, in agreement with the co-advisor from the host institution, can re-focus the work to ensure that the project meets the requirements of the MTh, in terms of the demonstration of the student's ability to be a qualified professional and/or researcher in the application fields of the EECPS Master Course

Written Report of the MTh

The student must elaborate a written report that must hold the following items:

- Title of the MTh.
- Abstract of the work, (max 300 words)
- Keywords of the MTh
- Contact data of the student (full name, valid e-mail address, etc.)
- Name of the Department, or if applicable, the Research Group of the University of Oviedo in which the MTh has been developed.
- Name of the Advisor, and if applicable, of the scientific or technical assistant
- In the case of EMth, name of the external institution in which the MTh is being developed.
- In the case of EMth, name of the co-advisor
- Main report, which will include the result of the work (analysis, design and implementation issues)

This main report will be fully developed in English language, and will include, compulsorily, the following sections

- 1.- Index
- 2.- Table of Symbols
- 3.- Introduction
- 4.- Objectives of the MTh
- 5.- State of the Art
- 6.- Individual Chapters for each relevant sections of the work developed
- 7.- Conclusions (degree of fulfilment of the objectives, problems, improvements, etc.)
- 8.- Future developments
- 9.- Quality report. Briefing on the global development of the project, stating incidences, enhancement and improvement suggestions in academic, administrative or technical issues related with the MTh.
- 10.- Bibliography and references
- 11.- In the event of EMTh, an specific chapter regarding the work done in the host institution will be included. In this section, a final leaf with an assessment matrix (following the template given in Appendix II) will be covered and signed by the co-advisor of the host institution.

The MTh report must state the work carried out by the student, in order to evaluate the acquisition of skills in the EECSP Master Course topics. The project will be deposited in the corresponding registry at the University of Oviedo. A copy will be delivered to the tutor. The report should not contain any confidential information, except in exceptional cases.

The recommended maximum length of the work is 100 pages. The inclusion of planes, specifications of components or irrelevant information from the point of view of the conclusions reached in the development of work must be avoided.

The report should be double-side printed, and the font size should be between 11 and 12pt. Annex III shows a recommended template for the report. The electronic file for the templates will be available in the official Web Site <http://mastereecps.uniovi.es> or in the Virtual Campus of the University of Oviedo.

All contents appearing on the report must be original contents of the student or, if cited, they must be properly referenced.

Final presentation and Evaluation Board

The Evaluation Board for the MTh shall consist of the project tutor and two experts in the EECPS Master Course topics. Among these experts, one may belong to an external institution, particularly in the host institution, if applicable (EMTh). In this case, the other member shall be a professor at the University of Oviedo.

The presentation and the subsequent question time will be driven in English.

The Evaluation Board will evaluate the written document submitted as well as the oral presentation. The oral presentation will be public, except for the case of EMTh with confidentiality concerns. In the latter case, the contact person in the company must have noticed at the beginning of MTh development this issue, to the tutor at the University of Oviedo. Both the advisor from the University of Oviedo and the co-advisor from the host institution will agree an acceptable solution, trying to safeguard the interests of the student.

A remote video presentation will be allowed when the student needs to continue in the host institution during the presentation and evaluation procedure. The specific technical solution selected will depend on the particular circumstances.

The Board shall consider the following in its evaluation:

Students of the Scientific/Research strand:

- Design solution carried out (50%)
- Argumentation of the design based in the engineering principles (electric engineering, control systems, electronics) (25%)
- Presentation and written report (25%)

Student of the Technical-Economic/Management:

- Proposed solution (50%)
- Technical and Economic Justification of the adopted solution (management, electric engineering, control systems, electronics) (25%)
- Presentation and written report (25%)

If the written report is considered to be lack in extension or entity by the advisor or by the board, the student will complete the work within two weeks from the initial presentation. The tutor shall inform immediately the issue to the Master Coordinator.

Renouncement or Changing of MTh

General terms given at the Master Thesis Regulations of the University of Oviedo apply (BOPA N^o 125, 1/6/2010. Article 4.4)

ANNEX I: PROCEDURES

Proposal and assignment of MTh

One month before the end of the first semester, students may consult the MTh proposals at the official Web Site <http://mastereecps.uniovi.es> or at the Virtual Campus of the University of Oviedo. In view of the offered MTh topics, the student must contact the corresponding advisor for those projects in which the student is interested. Both the student and the advisor will agree on specific conditions for development work.

In the case of a MTh proposed by an external institution, the EECPS Master Course Academic Committee will appoint an advisor, among the EECPS Master teachers, according to the project description. The final MTh assignment is definitive upon delivery by the student of the Proposal Form for Master's Thesis (available in <http://mastereecps.uniovi.es> or the Virtual Campus of the University of Oviedo), issued to the Master Coordinator, and signed by the student, the advisor of the University of Oviedo and, where appropriate, the external co-advisor. This signature may be made electronically. The deadline for this document is the end of the first semester.

Role of the Advisor at the University of Oviedo

- Validation of the MTh topic, by signing the document Proposal for Master's Thesis that the student has completed together with the university / institution / company.
- Ensure that the MTh is progressing well, whether conducted in a laboratory of University of Oviedo, in a company or another university.
- Organize an intermediate presentation (in the case of EMTh)
- Evaluation of the MTh written report.
- Organization of the MTh oral presentation, inviting, if appropriate, an external expert to act as a member of the Evaluation Board. Generally speaking, for EMTh, the co-advisor will act as the external expert.

Role of the student

- Fully Preparation of the Proposal Form for Master's Thesis. In the case of EMTh, the external institution may determine the purpose of the project.
- This form must be validated by a professor at the University of Oviedo. In the case of a proposal of the student or a third party, the student must find a professor from the University of Oviedo, being a teacher of the EECPS Master Course, to be the advisor of the MTh
- The student must submit the form for the course coordinator.

- In the case of EMTh, the student must report their arrival to the company or university, and the starting of the MTh, by sending an e-mail to the Master Coordinator.
- At the end of the thesis project, the student must submit 3 paper copies and one electronic copy of the MTh written report to the Master Coordinator.
- The student must prepare an oral presentation of the project supervised by the advisor from the University of Oviedo.

ANNEX II

EXTERNAL MASTER THESIS EVALUATION FORM, TO BE COMPLETED THE CO-
ADVISOR FROM THE HOST INSTITUTION.

EXTERNAL MASTER THESIS EVALUATION FORM

Student's Information

Surname:	Name:
ID/Passport:	E-mail:

Title of the Master Thesis

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Advisors

ID/Passport	Full Name	Institution

Evaluation Report of the MTh

(To be completed by the Co-advisor from the external institution)

Report	
Topic	Grade, from 0 (min) up to 10 (max)
Integration of the student	
Ability to adapt to the institution	
Technical Quality of the Work	
DEgree of accomplishment of the objectives of the MTh	
Student's ability to solve problems autonomously	
Average Grade	