Universidad Zaragoza

Academic Year/course: 2021/22

60573 - Master's Dissertation

Syllabus Information

Academic Year: 2021/22
Subject: 60573 - Trabajo fin de Máster
Faculty / School: 201 - Escuela Politécnica Superior
Degree: 546 - Master in Agricultural Engineering
ECTS: 12.0
Year: 2
Semester: First semester
Subject Type: Master Final Project
Module:

1. General information

1.1. Aims of the course

The course and its expected results respond to the following approaches and objectives:

This subject has an integrating character that mobilizes the set of competencies that the student has developed throughout his/her formative process, combining personal interests, studies completed and experiences attained. Specific competencies will be linked to it by virtue of the thematic and procedural choice made by the student.

These approaches and objectives are aligned with some of the Sustainable Development Goals, SDGs, of the 2030 Agenda (https://www.un.org/sustainabledevelopment/es/) and certain specific goals, contributing to some extent to their achievement. Especially with Goal 4: Quality Education, Target 4.7: "*By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development* [...]"

Since this is an activity different from the rest of those that students have to carry out, it is necessary to dictate some basic rules that regulate academic and administrative aspects of this activity, which constitute the Regulations of Final Projects (Dissertations) at the Escuela Politécnica Superior, some of them included in this syllabus.

1.2. Context and importance of this course in the degree

The Master's Thesis is part of the second year of the degree, with a duration of 12 ECTS. It synthesizes and integrates the competences acquired in the degree.

Therefore, it makes use of all the subjects of the plan and develops instrumental, interpersonal and systemic competences that constitute the basis of the future professional's performance capacity, of the adequate integration in his/her work context and of his/her own personal development.

1.3. Recommendations to take this course

Although, in order to defend the Master's Thesis, it is essential to have passed the rest of the subjects in the degree, it is advisable to plan this course sufficiently in advance by preparing and submitting the proposal to the Quality Assurance Committee of the Degree, taking into account the conditions and characteristics described in the Regulations of the Final Project of the Escuela Politécnica Superior, especially the minimum requirements for Master's Thesis proposals.

The Quality Assurance Committee of the Master's Degree in Agronomic Engineering will evaluate the proposals of the Master's Thesis presented by the student. In this sense, these proposals must contain the following sections:

1. Title.
2. Type of Master's Thesis: engineering project or research and/or development work.
3. Justification: The problem to be studied, the scientific, economic or social reasons and the intended purpose should be briefly stated, adequately justifying the contribution of the same to the promotion of sustainable development in any of its aspects, within the framework of the UN 2030 Agenda.
4. Objectives.
5. Structure of the work: Include a "table of contents" indicating the documents or sections into which the Master's Thesis will be divided, and a brief description of them.

2. Learning goals

2.1. Competences

Upon passing the course, the student will be more competent to....

Specific competences:

- Adequate knowledge and ability to develop and apply own technology in the realization, presentation and defense of an original exercise consisting of an integral project of Agronomic Engineering of professional nature in which the competences acquired in the degree's courses are synthesized.

Basic and general competences:

- To possess and understand knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context.
- That students know how to apply acquired knowledge and problem-solving skills in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their area of study.
- That students are able to integrate knowledge and face the complexity of making judgments based on information that, being incomplete or limited, includes reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments.
- That students know how to communicate their conclusions - and the ultimate knowledge and reasons that support them - to specialized and non-specialized audiences in a clear and unambiguous manner.
- Ability to plan, organize, direct and control the productive systems and processes developed in the agricultural sector and the agri-food industry, within a framework that guarantees the competitiveness of the companies without forgetting the protection and conservation of the environment and the improvement and sustainable development of the rural environment.
- Ability to design, project and execute infrastructure works, buildings, facilities and equipment necessary for the efficient performance of the productive activities carried out in the agri-food company.
- Ability to propose, direct and carry out research, development and innovation projects in products, processes and methods used in companies and organizations linked to the agri-food sector.
- Ability to transmit their knowledge and the conclusions of their studies or reports, using the means that communication technology allows and taking into account the knowledge of the receiving public.

2.2. Learning goals

In order to pass this course, the student must demonstrate the following results...

The Master's Thesis has an integrative character that mobilizes the set of competencies that the student has developed throughout his training process.

The student should be able to:

- Define objectives and strategies and plan actions in relation to the subject matter of their Master's Thesis, related to agronomic engineering, with a professional, creative and innovative perspective, integrating and synthesizing the training contents received and adequately justifying the contribution of the same to the promotion of sustainable development in any of its aspects, within the framework of the UN 2030 Agenda.
- To develop the professional competences associated with the profession of agricultural engineer.
- To present the Master's Thesis in a correct and structured way, justifying and substantiating its importance and relevance, the coherence of the approach, and to defend it consistently in front of an expert audience.

2.3. Importance of learning goals

Any other subject of the syllabus involves relevant learning results in the context of a specific area or areas, but in this case, its achievement means the accreditation by the student that he/she has acquired the competences associated to the degree and confers him/her the possibility of entering into the practice of the profession of Agronomist Engineer.

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

The student must demonstrate that he/she has achieved the expected learning outcomes by means of the following evaluation activities...

The student must make the presentation and defense of the Master's Thesis before the examining committee designated for this purpose at the place, date and time set, in compliance with the Regulations for Final Projects of the Escuela Politécnica Superior.

The recommended time for the presentation is 30/35 minutes, after which the panel members will ask questions to the student.

Evaluation criteria

The evaluation criteria and conditions for the evaluation of the Master's Thesis are described in the Final Project Regulations of the Escuela Politécnica Superior. Thus, each member of the examining board will evaluate the formal aspects of the report (20%), the content (50%) and the defense performed by the student (30%), and will issue a numerical grade between 0 and 10 for each of the three previous sections in the grade report, which must be weighted to obtain the average grade of each member of the examining board. The minimum average grade required for each section will be 5.0. The final grade will be the result of the weighted average of the scores given by the members of the examining board.

Evaluation rubric

FORMAL ASPECTS OF THE REPORT 20%.

Formal structure of the contents, organization, layout (10%)

Sources (currency, validity and relevance) References and citations* (completeness and standardization) (10%)

- Content (50%)
  - Definition of objectives and background and contribution of the Master's Thesis to sustainable development (15%)
  - Scientific/technical content, complexity and difficulty of the topic (20%)
  - Results, achievement of objectives, relevance of conclusions (15%)
- Defense (30%)
  - Oral communication (7.5%)
  - Verbal argumentation and synthesis capacity (15%)
  - Supporting resources in the defense (7.5%)

The evaluation rubric is available here.

The evaluation rubric, once filled by the examining committee, will be included in the student's file. In case of complaint, it may be requested for consultation.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The learning process designed for this course is an active methodology based on the autonomous work of the student. The main characteristics are as follow:

- Motivation for learning.
- Learning step by step, with increasing difficulty.
- Practical application of the theoretical concepts.
- Encouragment of independent learning of the student.
- Development of skills in: searching of information, research, data analysis, ...

4.2. Learning tasks

The learning activities are based on the autonomous work of the student under the supervision of an academic supervisor. In this sense, the student will receive frequent tutoring from his academic supervisor.

As a previous step, the student will complete an initial proposal detailing the contents of the Master's Dissertation. From this proposal, the final document will be elaborated and submitted both in electronic format and on paper. Finally, the student will present his/her work, in an oral presentation, in front of an examining committee.

4.3. Syllabus

No specific program is provided because the contents of the Master's Dissertation depend on each individual case.

4.4. Course planning and calendar

This course requires 300 hours of individual work of the student (12 ECTS).

4.5. Bibliography and recommended resources

No specific bibliography is provided because the contents of the Master's Dissertation depend on each individual case.