



Universitat de Lleida

# DEGREE CURRICULUM **MASTER'S THESIS**

Coordination: CASTELL CASOL, ALBERT ORIOL

Academic year 2019-20

## Subject's general information

<b>Subject name</b>	MASTER'S THESIS			
<b>Code</b>	14533			
<b>Semester</b>	UNDEFINED			
<b>Typology</b>	Degree	Course	Character	Modality
	Master's Degree in Industrial Engineering	2	COMPULSORY	Attendance-based
<b>Course number of credits (ECTS)</b>	18			
<b>Type of activity, credits, and groups</b>	<b>Activity type</b>	TFM		
	<b>Number of credits</b>	18	18	
	<b>Number of groups</b>	0	1	
<b>Coordination</b>	CASTELL CASOL, ALBERT ORIOL			
<b>Department</b>	COMPUTER SCIENCE AND INDUSTRIAL ENGINEERING			
<b>Important information on data processing</b>	Consult <a href="#">this link</a> for more information.			
<b>Language</b>	To be defined with the director			

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## Learning objectives

Master's thesis is a subject which is included in the syllabus of every master's degree. In case of master's degree in Industrial Engineering, master's thesis (MT) has 18 ECTS, it has to be done in the last academic year, and it comprises work that every student (or a group of students) carries out under the supervision of a director or two co-directors. This work allows students to show their acquired knowledge and competences associated with the master's degree in an integrated way.

## Competences

### Basic competences:

- **CB1** To possess and understand knowledge that provides a base or opportunity to be original in the development and/or application of ideas, often in a research context.
- **CB2** To be able to apply the knowledge gained and to solve problems in new environments in wider contexts (or multidisciplinary) related with the area of study.
- **CB3** To be able to integrate knowledge and face complexity in order to make judgements from an information that, being incomplete or limited, it would include issues of social and ethical responsibilities directly related to the application of this knowledge and judgements.
- **CB4** To be able to communicate conclusions –and knowledge and reasons that support them– to either specialized or not specialised publics in a clear way and without ambiguities.
- **CB5** To possess the skills to continue learning self-directed and freelance.

### General competences:

- **CG1** Capacity of planning and organizing the personal work.
- **CG2** Capacity to consider the socioeconomic context as well as the sustainability criteria in the engineering solutions.
- **CG3** Capacity to convey information, ideas, problems and solutions both to a specialised and no specialised public.
- **CG4** Capacity to conceive, design and implement projects and/or provide new solutions, using the tools that the engineering offers.
- **CG5** To be motivated for the quality and the steady improvement.
- **CG6** To have suitable knowledge of the scientific and technological issues of: mathematical, analytical and numerical methods in engineering, electrical engineering, energetic engineering, chemical engineering, mechanical engineering, mechanics of continuous means, industrial electronics, automation, manufacture, material, quantitative methods of management, industrial computing, urbanism, infrastructures, etc.
- **CG7** To project, calculate and design products, processes, installations and plants.
- **CG9** To do research, development and innovation in products, processes and methods.
- **CG13** Knowledge, understanding and capacity to apply the necessary legislation in order to practice the profession of Industrial Engineer.

### Cross-disciplinary competences:

- **CT1** Appropriate skills in oral and written language.
- **CT2** Command of a foreign language.
- **CT3** Mastering ICT's.

### Specific competences:

- **CE24** Execution, presentation and defence, once all the credits of the syllabus are obtained, an original work carried out individually in front of a university court, consisting of an integral project of Industrial Engineering of professional nature in which the competences are synthesized.

## Subject contents

The content of the Master's thesis can be due to the following cases:

- Student's proposal.
- Department's proposal.
- Proposal in the frame of a collaboration university-company.
- Thesis developed as a part of a mobility program.

The proposal must be validated by the director (or codirector) and the coordinator of the Master.

## Methodology

Every bachelor's thesis is directed by a director or two co-directors. The director or one of the codirectors must be a teacher who belongs to a teaching department of the same degree.

An external teacher may be proposed as a co-director, in which case a member of the UdL teaching staff must perform as a director.

## Development plan

### Proposal

A proposal of the master's thesis may be carried out in the following ways:

- A student's proposal.
- A department's proposal.
- Proposals carried out within the framework of the convention of cooperation between university and enterprise.
- Projects carried out within the framework of the mobility offered at UdL.

A proposal must be approved by the director (or the co-director) and the coordinator of the degree.

### Enrolment:

The enrolment allows a student to apply to reading his/her master's thesis in a call during the academic year.

Enrolment may be processed during two periods along the academic year:

- At the beginning of the first quarter.
- At the beginning of the second quarter.

## Evaluation

The master's thesis will be assessed following continuous assessment methodology. The final mark will be based on the marks of the following four items:

- Initial report (10%) which shows assimilation of the aims and context of the MT to carry out. It is assessed by the director.
- Follow-up report (10%) which presents evolution of the MT and decisions made. It is assessed by the director.
- Final document of the MT (50%). It is assessed by the director.
- Presentation and defense of the MT in front of an examination committee (30%).

The student will present his/her project and defend it publically answering committee's questions.