

## Course guide

### 205607 - 205607 - Research Project

Last modified: 19/04/2022

**Unit in charge:** Terrassa School of Industrial, Aerospace and Audiovisual Engineering  
**Teaching unit:** 712 - EM - Department of Mechanical Engineering.

**Degree:** MASTER'S DEGREE IN RESEARCH IN MECHANICAL ENGINEERING (Syllabus 2021). (Compulsory subject).

**Academic year:** 2021    **ECTS Credits:** 6.0    **Languages:** Catalan, Spanish, English

#### LECTURER

**Coordinating lecturer:** Romeu Garbi, Jordi

**Others:** Buj Corral, Irene  
Font Llagunes, Josep Maria  
Martinez Miralles, Jordi Ramon  
Travieso Rodriguez, Jose Antonio  
Casals Terre, Jasmina

#### DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

##### Generical:

CG1-MUREM. Solve problems of Mechanical Engineering through the application of mathematical, analytical, scientific, instrumental, technological and management aspects.

CG2-MUREM. Conceive, project, calculate and design processes, equipment, installations and plants, related to the design and manufacture of Mechanical Engineering elements.

CG7-MUREM. Adapt to changes, apply new and advanced technologies and other relevant processes, with initiative and an entrepreneurial spirit.

CG8-MUREM. Develop the learning skills that allow mastering the current and future activities of Mechanical Engineering and the continuous development of the field.

#### TEACHING METHODOLOGY

Research work will be carried out in collaboration with a research group of the student's choice. The work will consist of three parts: bibliographic review, laboratory work (either experimental or numerical), in collaboration with other students or members of the research group and with the means provided by the latter, to achieve the goals agreed between professor / and student, and writing the partial and final reports showing the progress made.

#### LEARNING OBJECTIVES OF THE SUBJECT

Develop a research activity in collaboration with a research group in the field of mechanical engineering.

#### STUDY LOAD

| Type              | Hours | Percentage |
|-------------------|-------|------------|
| Self study        | 96,0  | 64.00      |
| Hours large group | 30,0  | 20.00      |
| Hours small group | 24,0  | 16.00      |

**Total learning time:** 150 h

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### Project planning

**Description:**

Bibliographic search in scientific databases related to the project to be carried out. Determination of its state of the art.  
Definition of objectives and work plan

**Specific objectives:**

Knowledge of databases of scientific publications  
Develop the reading and comprehension of scientific papers  
Develop the capacity for bibliographic synthesis  
Ability to plan a research project

**Full-or-part-time:** 20h

Laboratory classes: 12h

Self study : 8h

### Research work

**Description:**

Laboratory work on the chosen research topic

**Specific objectives:**

Develop an experimental or theoretical research activity

**Full-or-part-time:** 110h

Theory classes: 30h

Self study : 80h

### Writing a research report

**Description:**

Write a short research report based on the work done

**Specific objectives:**

Learn to write scientifically  
Learn to synthesize the results obtained  
Learn to describe the work done  
Learn to quote in the bibliography

**Full-or-part-time:** 20h

Laboratory classes: 12h

Self study : 8h

## GRADING SYSTEM

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Evaluation: it will consist of two partial evaluations and a final one of the project to develop, each with the same weight on the final mark.

Renewal: the mark of the last evaluation will be adopted as the overall mark of the project if it exceeds the average mark

## RESOURCES

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**Other resources:**

The resources are those of the research groups where the research activity will be developed, which include specialized experimental

software and equipment.