Course guide
205607 - 205607 - Research Project

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Self study</td>
<td>96,0</td>
<td>64.00</td>
</tr>
<tr>
<td>Hours large group</td>
<td>30,0</td>
<td>20.00</td>
</tr>
<tr>
<td>Hours small group</td>
<td>24,0</td>
<td>16.00</td>
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Total learning time: 150 h
CONTENTS

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

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

Other resources:
The resources are those of the research groups where the research activity will be developed, which include specialized experimental
software and equipment.