



IDENTIFYING DATA

Final Year Dissertation

Subject	Final Year Dissertation			
Code	P52G381V01991			
Study programme	(*)Grao en Enxeñaría Mecánica			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	12	Mandatory	5th	2nd
Teaching language	Spanish English			
Department				
Coordinator	Maceiras Castro, María del Rocío			
Lecturers	Maceiras Castro, María del Rocío			
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General description	The Final Year Project (TFG) forms part, like module, of the curriculum of the Mechanical Engineering Bachelor Degree. It is an original and personal work that each student will make under lecturer supervision, allowing him/her to show in an integrated way the acquisition of the formative contents and the competences associated to the degree.			

With this work the student applies the knowledges acquired during his/her training, so much of the module of specific mechanical technology as of other fields of knowledge related with the mechanical engineering necessary to carry out the TFG, which reflects its multidisciplinary character. Moreover, it is pretended that the student acquire or reinforce some capacities that allow him/her to project, design and develop complex products, processes and systems of the speciality; have consciousness of the social appearances, of health and security, environmental, economic and industrial; select and apply methods of appropriate project; and look for solutions from a technical point of view as well as its implementation and adequation to the environment.

Its definition and contents are explained more extensively in the regulations for the completion of the Final Year Project approved by Centre Board, in its first version, in session celebrated on 2/9/2014, and whose updated content is shown in the website of the Defense University Center, in the section dedicated to the TFG (Student Section -> Final Year Project).

Competencies

Code	
B1	Skills for writing, signing and developing projects in the field of industrial engineering, whose purpose is, specializing in Mechanics, according to the knowledge acquired pursuant to paragraph 5 of this order, construction, alteration, repair, maintenance, demolition, manufacturing, installation, assembly or operation of: structures, mechanical equipments, energy facilities, electrical systems and electronic installations and industrial plants, and manufacturing processes and automation.
B2	Ability to manage the activities object of the engineering projects described in CG1.
B3	Knowledge in basic and technological subjects that will enable students to learn new methods and theories, and provide them the versatility to adapt to new situations.
B4	Ability to solve problems with initiative, decision making, creativity, critical thinking and the ability to communicate and transmit knowledge and skills in the field of Industrial Engineering in Mechanical speciality.
B10	Ability to work in a multidisciplinary and multilingual environment.
B12	Original exercise to realise individually and present and defend in front of a university committee, consistent in a project in the field of the specific technologies of the Industrial Engineering in the Mechanical speciality of professional nature in which the skills and competences acquired in the educations are summarised and integrated.
D4	Oral and written proficiency in a foreign language.
D12	Research skills.

Learning outcomes

Expected results from this subject	Training and Learning Results	
Research and structuring of information on any subject	B1 B2 B3 B4 B10 B12	D12
Preparation of a project report which collects : introduction, problematic or state of the art, aims, phases of the project, development of the project, conclusions and future lines.	B1 B2 B3 B4 B10 B12	D4 D12
Design of equipments, prototypes, programs of simulation, etc, according to specifications.	B1 B2 B3 B4 B10 B12	D12
ENAAEE LEARNING OUTCOMES. KNOWLEDGE AND UNDERSTANDING LO1.3.- awareness of the wider multidisciplinary context of engineering (level of development of this learning outcome - Intermediate (2)).	B10 B12	
ENAAEE LEARNING OUTCOMES. ENGINEERING ANALYSIS LO2.1.- The capacity to analyse products, processes and complex systems in his field of study; choose and apply of pertinent form analytical methods, of calculation and experimental already established and interpret properly resulted of said analysis (Intermediate (2))	B1 B2 B4	
ENAAEE LEARNING OUTCOMES. ENGINEERING ANALYSIS LO2.2.- ability to identify, formulate and solve engineering problems in their field of study; to select and apply relevant methods from established analytical, computational and experimental methods; to recognise the importance of non-technical □ societal, health and safety, environmental, economic and industrial □ constraints (Intermediate (2))	B4	
ENAAEE LEARNING OUTCOMES. ENGINEERING DESIGN LO3.1.- ability to develop and design complex products (devices, artefacts, etc.), processes and systems in their field of study to meet established requirements, that can include an awareness of non-technical □ societal, health and safety, environmental, economic and industrial □ considerations; to select and apply relevant design methodologies (Intermediate (2))	B4 B12	
ENAAEE LEARNING OUTCOMES. ENGINEERING DESIGN LO3.2.- ability to design using some awareness of the forefront of their engineering specialisation (Intermediate (2))	B1 B4 B12	
ENAAEE LEARNING OUTCOMES. INVESTIGATIONS LO4.1.- ability to conduct searches of literature, to consult and to critically use scientific databases and other appropriate sources of information, to carry out simulation and analysis in order to pursue detailed investigations and research of technical issues in their field of study (Intermediate (2))		D12
ENAAEE LEARNING OUTCOMES. INVESTIGATIONS LO4.3.- laboratory/workshop skills and ability to design and conduct experimental investigations, interpret data and draw conclusions in their field of study (Intermediate (2))	B12	D12
ENAAEE LEARNING OUTCOMES. ENGINEERING PRACTICE LO5.2.- practical skills for solving complex problems, realising complex engineering designs and conducting investigations in their field of study (Intermediate (2))	B4	D12
ENAAEE LEARNING OUTCOMES. MAKING JUDGEMENTS LO6.2.- ability to manage complex technical or professional activities or projects in their field of study, taking responsibility for decision making (Advanced (3))	B1 B2	
ENAAEE LEARNING OUTCOMES. COMMUNICATION AND TEAM WORKING LO7.1.- ability to communicate effectively information, ideas, problems and solutions with engineering community and society at large (Advanced (3))	B1 B4 B12	D4
ENAAEE LEARNING OUTCOMES. COMMUNICATION AND TEAM WORKING LO7.2.- ability to function effectively in a national and international context, as an individual and as a member of a team and to cooperate effectively with engineers and non-engineers (Intermediate (2))	B1	D4

Contents

Topic

It tries to tackle the resolution of an original and individual exercise in which the student confronts to a real problem of the field of the engineering, uses the methodology acquired during his/her training and proposes a technically valid and viable solution.

The contents of each TFG will be defined in the individual proposals offered by the lecturers and approved in the Centre Board, according to the regulations for the realisation of the Final Year Project. Each TFG will have a different content.

Planning			
	Class hours	Hours outside the classroom	Total hours
Mentored work	20	0	20
Seminars	12	38	50
Autonomous problem solving	0	210	210
Presentation	5	15	20
*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.			

Methodologies	
	Description
Mentored work	The student, in an individual way, guided and supervised by his/her advisor, elaborates, as a result of the developed work, a project according to the indications of the Regulations for the realisation of the Final Year Project of the CUD-ENM. In said memory, the student presents the results of his/her work in which he/she has had to project, design or develop products, processes or systems of the field, as well as propose solutions to the problem posed in the field of the engineering, taking into account in the measure of the possible social factors of health and security, environmental, economic and industrial.
Seminars	The students that fails the Final Year Project will have to improve, in an individual way, guided and supervised by his/her advisor, the project according to the indications of committee.
Autonomous problem solving	<p>Studies/previous activities</p> <p>Before carrying out the work (also during the same), the student will have to make bibliographic researches and consult specific databases, what will allow him/her a better processing and preparation so much of documentation, as of proposals of resolution to the problem proposed in the TFG. These activities will be carried out in the classroom and/or laboratory, independently by the students.</p> <p>Personalised and individualized attention by the advisor</p> <p>The advisor will supervise the progress of the TFG through periodic meetings where he/she will provide feedback to the student.</p> <p>Integrated methodologies</p> <p>The student presents the result obtained in the preparation of a document on the thematic of the matter. It will be carried out individually, both in writing (memory) and orally (presentation).</p> <p>Presentation and public defense</p> <p>The students must prepare and defend the work done in front of a committee. The defense may be carried out in a face-to-face or online session (by using a web conference platform).</p>

Personalized assistance	
Methodologies	Description
Mentored work	The advisor will supervise the progress of the TFG through periodic meetings where he/she will provide feedback to the student. The advisor will take time to help personally to each of the TFG students, to guide their work and guide their learning process, as well as to review and correct the report.
Seminars	The advisor will supervise the improvement of the TFG through periodic meetings where he/she will provide feedback to the student. The advisor will take time to help personally to the TFG students, to guide their work and guide their learning process, as well as to review and correct the report.
Tests	Description
Presentation	The students must prepare and defend the work done in front of a committee. It will be able to be presentially or telematically, through the platform of videoconference web.

Assessment		
Description	Qualification	Training and Learning Results

Mentored work	Report of the TFG advisor	25	B1 B2 B4 B12	D12
Presentation	Report of the committee of the TFG Evaluation of the presentation and defense	75	B1 B2 B3 B4 B10 B12	D4 D12

Other comments on the Evaluation

At least one committee will be appointed, consisting of three lecturers for each of the following areas: **MAT** (Mathematics), **MEC** (Mechanics), **ENE** (Energy), **QUI** (Chemistry), **TEL** (Telecommunications), **OI** (Industrial Organization), **GEO** (Geomatics) and **NAV** (Naval and Oceanic Engineering).

The evaluation will be carried out according to the regulations for the completion of the Final Year Project as well as the evaluation rubric, both approved by the Center Board, whose updated contents are shown on the CUD website, in the section dedicated to the TFG (Student Section -> Final Year Projects).

ETHICAL COMMITMENT: Students are expected to have adequate ethical behavior. If a type of unethical behavior is detected (cheating, plagiarism or others), the student will be penalized so that in that call he / she will obtain a qualification of 0.0.

If the student fails, the evaluation committee will make a report with the appropriate recommendations to the student or advisors for improving the work in a future evaluation.

Sources of information

Basic Bibliography

Complementary Bibliography

Recommendations

Other comments

Important information: In the moment of the defense of the TFG, the student must have all the remaining subjects of the degree passed, as established in the article 7.7 of the Regulation for the realisation of the Final Year Project of the University of Vigo.

Contingency plan

Description

=== EXCEPTIONAL PLANNING ===

Given the uncertain and unpredictable evolution of the health alert caused by COVID-19, the University of Vigo establishes an extraordinary planning that will be activated when the administrations and the institution itself determine it, considering safety, health and responsibility criteria both in distance and blended learning. These already planned measures guarantee, at the required time, the development of teaching in a more agile and effective way, as it is known in advance (or well in advance) by the students and teachers through the standardized tool.

=== ADAPTATION OF THE ASSESSMENT ===

The defense of the Final Year Projects will be carried out online by using a web conference platform.