UniversidadeVigo

IDENTIFYING DATA

Engineering Projects

Subject	Engineering Projects
Code	V04M141V01222
Study programme	(*)Máster Universitario en Enxeñaría Industrial

Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Mandatory	1st	2nd

Teaching language	Spanish English
Department	
Coordinator	Goicoechea Castaño, María Iciar
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General description	(*)En la materia de ""Proyectos de Ingeniería"" los alumnos adquieren los conceptos básicos de la Dirección y Gestión de Proyectos, los principales procesos y el vocabulario estándar de la misma, con una visión práctica que puede ser aplicada por empresas de distintos sectores. Al finalizar la asignatura el alumno conoce las distintas metodologías de Dirección de Proyectos, así como las principales herramientas que soportan la gestión necesarias para ser capaz de entender, plantear y resolver un proyecto. Se fomenta también el desarrollo de habilidades y competencias genéricas como el trabajo en equipo, inteligencia emocional y social para mejorar la comunicación interpersonal en las organizaciones.

Competencies

Code	
A1	CB6. Knowledge and understanding that provide a basis or opportunity for originality in developing and / or applying ideas, often in a research context.
A2	CB7. That the students can apply their knowledge and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study.
A3	CB8. That students are able to integrate knowledge and handle complexity and formulate judgments based on information that was incomplete or limited, include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments.
A4	CB9. Students can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously.
A5	CB10. Students must possess the learning skills that enable them to continue studying in a way that will be largely self-directed or autonomous.
C1	CET1. Project, calculate and design products, processes, facilities and plants.
C2	CET2. Manage, plan and supervise multidisciplinary teams.
C4	CET4. Perform strategic planning and apply to both constructive and production, quality and environmental management systems.
C5	CET5. Technically and economically manage projects, installations, plants, companies and technology centers.
C6	CET6. Able to exercise general direction, technical direction and project management R & D in plants and technology centers.
C7	CET7. Apply their knowledge and solve problems in new or unfamiliar environments within broader contexts and multidisciplinary environments.
C8	CET8. Being able to integrate knowledge and handle complexity and formulate judgments based on information that was incomplete or limited, include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments.
C11	CET11. Knowledge, understanding and ability to apply the necessary legislation in the exercise of the profession of Industrial Engineer.
C26	CGS7. Knowledge and Skills for Integrated Project Management.
C33	CIPC6. Knowledge and skills to perform monitoring and control of facilities, processes and products.
C34	CIPC7. Knowledge and skills for certification, audits, inspections, tests and reports.

D4	ABET-d. An ability to function on multidisciplinary teams.
D6	ABET-f. An understanding of professional and ethical responsibility.
D8	ABET-h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
D11	ABET-k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Learning outcomes

Expected results from this subject	Training and Learning Results
(*)	A3 C11 C26 C33 C34 D4 D6 D8 D11
(*)	A1 A2 C2 C4 C5 C6 C26 C33 C34 D4 D6 D8 D11
(*)	A3 A4 A5 C1 C7 C8 C26 C33 C34 D4 D6 D8 D11

Contents

Topic	
1. Conceptual frame of the Direction of Projects	1.1. Introduction to the management of projects. 1.2. Methodologies applied to the Direction of projects: Agile (*SCRUM, READ,...) And predictive (*IPMA, *PMI,...) 1.3.Cycle of life of the project and organisation.
3. Phase of start of the Project: utilisation of agile methodologies of Directionof Projects.	3.1 *Business *Model *Canvas 3.2 *Project *Model *Canvas 3.3 Record constitution Project
2. Traditional or predictive methodologies of Direction of projects. PMBok	2.1. Methods of Selection of Projects 2.2. Areas of knowledge: integration, scope, time, costs, quality, *RRHH, communication, risks, acquisitions and interested.
4. Phase Planning of the Project	4.1 Structure of breakdown of the work (*EDT) 4.2 Planning of the project with computer tool

Planning

	Class hours	Hours outside the classroom	Total hours
Classroom work	6	18	24
Presentations / exhibitions	2	4	6
Practice in computer rooms	4	8	12

Group tutoring	1	3	4	
Master Session	9	18	27	
Other	2	0	2	

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Classroom work	The student develops exercises or projects in the classroom under the directives and supervision of the teacher. The development of these works can be linked by autonomous activities of the student or in group. In the accomplishment of these works active participation and collaboration will be needed between the students.
Presentations / exhibitions	Final exhibition of the project in group
Practice in computer rooms	Accomplishment of practices with software of project planning
Group tutoring	Accomplishment of tutorship of follow-up in group of the advance of the project
Master Session	Exhibition on the part of the teacher of the contents on the matter I object of study, theoretical bases and / or directives of a work, exercise or project to developing for the student. The theoretical contents will be appearing for the teacher, complemented with the active intervention of the students, in total coordination with in the development of the practical programmed activities.

Personalized attention

Methodologies	Description
Group tutoring	

Assessment

	Description	Qualification	Training and Learning Results		
Classroom work	The works of classroom constitute a project to realizing in group that will be developing along the course in the classroom and it complements itself with the work of the group out of the classroom. The number of pupils that the group constitutes will notice to the beginning of the course with the teacher.	30	A1 A2 A3 A5	C26	
Presentations / exhibitions	A mitad de curso cada grupo realiza una exposición previa, inicial de su proyecto. En ella, tras haber definido su modelo de negocio, deciden el proyecto que van a realizar y desarrollan el acta de Constitución del proyecto. Los alumnos recibirán el feedback correspondiente tanto a nivel técnico como de la presentación oral realizada. Cada alumno realizará una valoración de los proyectos que realizan sus compañeros según un formulario que se les dará. Al final de curso, cada grupo expondrán definitivamente su proyecto y la planificación del mismo. Se valorará individualmente y en grupo la mejora realizada con respecto a la presentación inicial previa y así como las respuestas a las preguntas realizadas por el profesorado o resto de compañeros.	20	A4	C1 C2 C4 C5 C6 C7 C8 C11 C26 C33 C34	D4 D6 D8 D11
Other	There will be realized at the end of course an examination that consists of a part type test and other one you depart from short response, development and / or resolution of problems	50	A2		

Other comments on the Evaluation

All the pupils can accede to the continuous assessment of the matter along the course. To be able to accede to the continuous assessment the pupil has to attend at least 50 % so much of the theoretical as practical classes. The qualification of the continuous evaluation will be the following one: - the written test has a value of 4 in the final note - the final exhibition a value of 2 in the final note and - the work presented by the group a value of 4 in the final note. To be able to choose to the pass in the continuous assessment it is necessary to pass each of the parts with 5. Those pupils who do not choose for the continuous assessment can approve the subject with the final examination in the corresponding date fixed by the direction of the center.

The examination there will enter both the contents of the theoretical classes and the practices. Ethical commitment: it hopes that the pupil presents an ethical suitable behavior. In case of detecting a not ethical behavior (copy, plagiarism, utilization of electronic not authorized devices, for example), will think that the pupil does not assemble the necessary requirements to overcome the matter. Depending on the type of odd ethical detected behavior, it might conclude that the pupil has not reached the competitions B2, B3 and CT19.

Sources of information

Project Management Institute (PMI), **A guide to the Project Management Body of Knowlegde (PMBok Guide)**, 5ª Edición,

Chatfield, Carl; Johnson, Timothy, **Step by Step. MICROSOFT PROJECT 2013**, 1ª Edición,

Liliana Buchtik, **Secrets to Mastering the WBS in real world projects**, 2ª edition,

Ted Klastorin, **Gestión de Proyectos con casos prácticos, ejercicios resuletos, Microsoft project, Risk y hojas de cálculo**, 1º edition,

Fleming, Quentin W., **Earned value project management**, 4º edition,

Lilian Buchtik, **La gestión de riesgos en Proyectos**, 2º edition,

Recommendations

Other comments

To register in this matter is a necessary overcome credit or to register of all the matters of the courses lower than the course in which this matter is located.