



## IDENTIFYING DATA

### Projects

Subject	Projects			
Code	V09G290V01801			
Study programme	Degree in Energy Engineering			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Mandatory	4th	2nd
Teaching language	Spanish English			
Department				
Coordinator	Comesaña Campos, Alberto Goicoechea Castaño, María Iciar			
Lecturers	Comesaña Campos, Alberto Goicoechea Castaño, María Iciar			
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**General description** The aim that pursues with this subject is to orient students in the acquisition of the knowledge and the skills that capacity them for the handle and application of methodologies, technical and tools oriented to the preparation, organisation and management of projects and other own technical documents of the degree, with the purpose that it exercise with an approach that is similar to the reality of his future professional activity.

To attain it will employ a wide approach of the subjects of the matter, looking for the integration of the knowledges purchased along the career and his application by means of a methodology, organisation and management of distinct modalities of technical works, as true essence of the profession of engineer, in the frame of his attributions and fields of activity.

Likewise, it will promote the development of the competitions of the subject by means of a methodology of learning based in projects so that the exposed contents in theoretical classes implement in the development of the practical activities, oriented to the technical reality of the profession, assimilating the agile and precise employment of the distinct rule of application and of the professional best practices established, supporting in methodologies to document, elaborate, manage and present the technical documentation that correspond.

## Competencies

Code	
C19	Knowledge of project methodology, management and organization.
D2	Capacity to develop a complete project in any field included in this type of engineering, suitably combining acquired knowledge, accessing necessary information sources, undertaking the necessary enquiries and integrating into interdisciplinary work teams.
D3	Propose and develop practical solutions, which develop suitable strategies based on theoretical knowledge, for problem phenomena and situations that arise as everyday realities in engineering
D4	Encourage work based on cooperation, communication skills, organization, planning and recognition of responsibility in a multilingual and multidisciplinary working environment that fosters education in equality, peace and respect for fundamental rights
D5	Know what sources are available for ongoing and continual updating of all the information required to undertake their work, with access to all the current and future tools for seeking information and adapting it in the light of technological and social changes
D6	Know and handle legislation applicable to the sector, know the social and business environment and know how to work together with the Administration and use acquired knowledge to draw up engineering projects and develop any of the aspects of professional work required
D7	Capacity to organise, interpret, assimilate, create and manage all the information needed to organise their work, handling the I.T., mathematical, physical and other tools required

## Learning outcomes

Expected results from this subject		Training and Learning Results
To understand the basic aspects for undertaking Projects as an Engineer: professional competences, duties and responsibilities.		D2 D4 D5 D6
To know about the technological basis supporting the technical solutions applied in each Project.		D3 D5 D6
To know the applicable legislation when drawing up and proceeding with Projects, and the distinct administrative procedures for authorisation	C19	D2 D5 D6 D7
To know the particular protocol for undertaking a Mining Project, an Industrial Project, an Energy Project, and an Infrastructure Project, within the scope of the qualification's competences	C19	D2 D4
To know the latest I.T. techniques for drawing up and carrying out Projects.	C19	D2 D3 D5 D6 D7
To become aware of the conditioning environmental, health and safety factors when drawing up and carrying out Projects		D2 D5 D6 D7
To acquire a solid knowledge of how to draw up real, correct budgets, and their importance as a Project management tool	C19	D2 D3

## Contents

Topic	
1. Introduction and presentation of the subject	1.1. Presentation. 1.2. Syllabus
2. Project	2.1 Definition. Types of Projects 2.2 Content 2.3 Standards 2.4 Portfolio, program, project, operation
3. Project Management	3.1 Definition 3.2 Agile Methodologies 3.3 Predictive Methodologies
4. Project Management. PMBOK	4.1 Definition 4.2 Cycle of life of the project 4-3 Areas of Knowledge 4.4 Processes 4.5 Matrix of processes of the PMBOK
5. Project Management. Stage Beginning of the Project	5.1 Business Model Canvas (BMCanvas) 5.2 Project Model Canvas (PMCanvas) 5.3 Selection of Projects 5.4 Project Charter
6. Project Management. Stage Planning of the project. Scope, time and cost Management	6.1 Creation of the WBS: Work breakdown structure 6.2 Milestones 6.3 Deliverables 6.4 Planning. Method of the critical path 6.5 Resources 6.6 Costs 6.7 Base Line of the project
7. Project Management. Stage Tracking and control of the project	7.1 Follow-up of the Project. Tracking Gantt 7.2 Status date 7.3 Rescheduling 7.4 Method of Earned value
8. Project Management Stage End of the Project	8.1 Deliverable 8.2 Lessons learned
9. HR Management of the Project	9.1 Planning of HR 9.2 Execution of HR 9.2.1 Acquisition of the team 9.2.2 Development of the team 9.2.3 Manage the team

10. Quality Management of the Project	10.1 Quality plan 10.2 Quality assurance 10.3 Quality Control
11. Risk Management of the Project	11.1 Planning 11.1.1 Planning Risks 11.1.2 Identification risk 11.1.3 Qualitative analysis of risks 11.1.4 Quantitative analysis of risks 11.1.5 Answer plan 11.2 Tracking and control 11.2.1 Risks 's control

### Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	28	56	84
Mentored work	14	28	42
Practices through ICT	6	12	18
Seminars	2	0	2
Essay	0.5	1.5	2
Problem and/or exercise solving	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
Lecturing	Presentation by the teacher of the contents on the subject under study, theoretical and / or guidelines for a job, exercise or project to be developed by the student.
Mentored work	Students develop exercises or classroom projects under the guidance and supervision of the teacher. May link autonomous development of student activities
Practices through ICT	Activities application of knowledge to specific situations, and the acquisition of basic skills and procedural matters related to the object of study, which are held in computer rooms.
Seminars	Interviews held with the student teachers of the subject for advice / development activities of the course and the learning process.

### Personalized assistance

#### Methodologies Description

Lecturing	The tutorial sessions will be individual. They will clear the doubts of the student and will help her with the contents of the course. Can realise tutorial sessions in small group gathering to students with the same problem for a better efficiency. For all the teaching modalities considered in the Contingency Plan, the tutorial sessions can be carried out using IT tools (email, video-call, FAITIC forums, etc.) according to the modality of prior concertation of the virtual place, date and time.
Mentored work	They will do tutorial sessions of group with the professor to clear doubts and for the follow-up of the work. The tutorial sessions can be carried out using IT tools (email, video-call, FAITIC forums, etc.) according to the modality of prior concertation of the virtual place, date and time.
Seminars	Personalised interview with the students. For all the teaching modalities considered in the Contingency Plan, the tutorial sessions can be carried out using IT tools (email, video-call, FAITIC forums, etc.) according to the modality of prior concertation of the virtual place, date and time.

### Assessment

Description	Qualification	Training and Learning Results

Essay	The student, in group, will realise a project according to the contents of the matter. For this will ask them a series of deliverables during the course and will realise an oral presentation of the Project at the end of the matter. The number of students that constitute the group fixed to the beginning of the course with the professor. Results of learning: Know the technological base on which support the technical solutions to apply in each Project. Know the applicable legislation in the editorial and processing of Projects, as well as the diverse administrative procedures of permission. Know the particular protocol of realisation of a Mining Project, an Industrial Project, an Energetic Project, and a Project of Infrastructures, in the competence fields of the degree. Know the new computer technicians for the editorial and execution of Projects. Purchase consciousness on the environmental conditionings and of security and health in the editorial and execution of Projects. Purchase a solid knowledge of as realise correct and real budgets, and his importance like tool of management of the Project. Comprise the basic appearances of the realisation of Projects by part do Engineer, his professional competitions, duties and responsibilities.	50	C19	D2 D3 D4 D5 D6 D7
Problem and/or exercise solving	Examination of the theoretical part of the matter. Results of learning: Comprise the basic appearances of the realisation of Projects by Engineer, his professional competitions, duties and responsibilities. Know the applicable legislation in the editorial and processing of Projects, as well as the diverse administrative procedures of permission. Know the particular protocol of realisation of a Mining Project, an Industrial Project, an Energetic Project, and a Project of Infrastructures, in the fields competences of the degree.	50	C19	D2 D4 D5 D6

### **Other comments on the Evaluation**

The evaluation of the work of the student, individual and/or in group, of face-to-face form and no face-to-face will realise by means of the assessment of the professor averaging the different activities realised.

To follow the subject the students can opt by the modality of Continuous Evaluation or the one of Evaluation no Continuous. In both cases, to obtain the qualification will employ a system of numerical assessment with values of 0,0 to 10,0 points according to the valid legislation (R.D. 1125/2003 of 5 September, BOE. Number 224 of 18 September). The subject will be passed when the qualification of the student was over 5,0.

#### For the First Announcement or Edition (ordinary 1<sup>o</sup> period)

##### To) Modality of Continuous Evaluation:

The final note of the subject will combine the qualifications of the project realised in group and his oral exhibition (50%), as well as the proof written (50%).

They will value the behaviour and the implication of the student in the classes and in the realisation of the diverse activities programmed, the fulfillment of the terms of delivery and/or exhibition and defence of the works proposed, etc.

In case that a student do not reach the minimum of 5 points on 10 demanded in any of the sections, will have to realise a final examination in the date fixed by the Direction of the centre.

To be able to access to the continuous evaluation, the student has to can assist to 75% of the total of the classes, and to have delivered in due time and manner all the deliverables requested during the course.

##### b) Modality of Evaluation no Continuous:

It establishes a term of two weeks from the start of the course so that the student justifies with a document his impossibility to follow the process of continuous evaluation.

The student that renounce to the continuous evaluation will have to realise a final examination that will cover the whole of the contents of the subject, so many theorists like practical, and that it will be able to include test type test, questions of reasoning, resolution of problems and development of practical suppositions. The qualification of the examination will be 100% of the final note.

It demands reach a minimum qualification of 5,0 points on 10,0 possible to be able to pass the subject

#### For the Second Announcement or Edition (extraordinary of July)

The students that do not surpass the subject in the First Announcement will have a second announcement according to the calendar fixed by the centre.

The students that have not surpassed the subject in the First Announcement will be able to present to the Second Announcement, where will realise an examination that will cover the whole of the contents of the subject, so many theorists

like practical, and that they will be able to include test type test, questions of reasoning, resolution of problems and development of practical cases. It demands reach a minimum qualification of 5,0 points on 10,0 possible to be able to surpass the subject.

Calendar of examinations: Verify /consult of up to date form in the page web of the centre:

<http://minaseenerxia.uvigo.es/es/docencia/examenes>

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## Sources of information

### Basic Bibliography

Project Management Institute, **GUIA DE LOS FUNDAMENTOS DE LA DIRECCION DE PROYECTOS**, 6ª, PMI, 2017

Project Management Institute, **A guide to the project management body of knowledge : (PMBOK guide)**, 6ª, PMI, 2017

Buchtik, Liliana, **Secrets to mastering the WBS in real-world project**, 2ª, PMI, 2013

Buchtik, Liliana, **Secretos para dominar la gestión de riesgos en proyectos**, 11, Buchtik Global, 2013

### Complementary Bibliography

Toro Lopez, Francisco, **Gestión de Proyectos con enfoque PMI al usar Project y excel**, 1ª, ECOE, 2011

ENI, **Microsoft Project 2016**, 1ª, ENI, 2016

Chatfield, Carls, **Microsoft Project 2016 step by step**, 1ª, MicroPress, 2016

Mulcahy, Rita, **Preparación para el examen PMP**, 8ª, RMC Public, 2013

Mulcahy, Rita, **PMP exam prepare**, 8ª, RMC Public, 2013

Klastorin, Ted, **Gestión de proyectos : con casos prácticos, ejercicios resueltos Microsoft Project, Risk y hojas de cálculo**, 1ª, PROFIT, DL, 2010

Goicoechea Castaño, Itziar, **PROYECTOS DE EDIFICACIONES Y CONSTRUCCIONES INDUSTRIALES**, 1, Andavira, 2009

Díaz Martín, Ángel, **EL ARTE DE DIRIGIR PROYECTOS**, 3ª, RA-MA, 2010

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## Recommendations

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### Other comments

All the documentation will be available and the communication will realise through the platform Faitic.

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## Contingency plan

### Description

Considering the uncertain and unpredictable evolution of the health alert caused by COVID-19, the University establishes an extraordinary planning that will be activated when the administrations and the institution determine it. It is based on safety, health and responsibility, and it guarantees teaching in an online or semi-presential modalities. These already planned measures will guarantee, at the required time, the development of teaching in a more agile and effective way, because they will be known in advance by students and teachers through the standardized tool for teaching guides DOCNET.

#### 1. Semi-presential modality

Once the semi-presential teaching is required, it would mean a reduction of the capacity of the teaching spaces used in the face-to-face modality. Therefore, as the first measure of the centre, the capacity of the teaching spaces would be reformulated and informed to the teachers, in order to proceed to reorganize the formative activities for the rest of the semester. It should be noted that the reorganization will depend on the moment throughout the semester in which this semi-presential modality is activated. For the reorganization of the teaching activities, the following guidelines would be followed:

Through the FaiTIC platform, all the students will be informed about the new conditions under which the formative activities and assessment tests will be carried out at the end of the semester.

The tutorial sessions will be carried out by telematic means (email, videoconference, FAITIC forums, ...) with prior agreement.

Once some of the students have carried out experimental or computer laboratory practices in the face-to-face modality, if it is possible, the rest of the students will have the possibility to perform the same or equivalent activities in the same modality.

For the rest of the activities until the end of the semester, it should be done a proper identification of those formative activities which can be done under face-to-face modality and those which will be carried out remotely.

Regarding the potential tools to be applied for the formative activities during the online mode, CampusRemoto and the FaiTIC platform will be used.

## 2. Online modality

In the event that the non-face-to-face teaching modality is required (suspension of all face-to-face formative and assessment activities), the tools currently available at the University of Vigo, CampusRemoto and the FaiTIC platform will be used. The reorganization will depend on the moment throughout the semester in which this online modality is activated. In the reorganization of the teaching activities, the following guidelines would be followed:

### 2.1. Communication

Through the FaiTIC platform, all the students will be informed about the new conditions under which the formative activities and assessment tests will be carried out at the end of the semester.

### 2.2. Adaptation and / or modification of teaching methodologies

As the teaching methodologies have been conceived for the face-to-face teaching modality, the teaching methodologies that would be kept and those which would be modified or replaced in the online modality are indicated below.

The teaching methodologies that would be kept, since they can be used in face-to-face and online teaching mode. Even if the teaching methodologies initially defined for the course were fundamentally conceived towards the full-classroom modality, the teaching staff considers that they keep in essence their effectiveness in the non-classroom modality. That is why it is proposed to keep them as they are, even if special attention will be paid to their right development and results.

Therefore, no changes will be made to the teaching methodologies initially defined for the course.

### 2.3. Adaptation of tutorial sessions and personalized attention

The tutorial sessions may be carried out by telematic means (email, videoconference, FAITIC forums, ...) with prior agreement.

### 2.4. Evaluation

No changes will be made neither to the evaluation tests, nor to their corresponding score weights, nor to their set dates.

### 2.5. Bibliography or additional material to facilitate self-learning

The teaching staff for the course will provide the students with the necessary learning materials to attend to the specific help needs of the students with respect to the course, according to the circumstances that turn out at any particular time, through the FAITIC portal.

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