



## IDENTIFYING DATA

### Technology Management

Subject	Technology Management		
Code	V05G300V01801		
Study programme	Degree in Telecommunications Technologies Engineering - In extinction		
Descriptors	ECTS Credits	Choose	Year
	6	Mandatory	4th
Teaching language	Spanish		Quadmester
	English		2nd
Department			
Coordinator	González Castaño, Francisco Javier		
Lecturers	Docio Fernández, Laura González Castaño, Francisco Javier López Bravo, Cristina		
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Web	<a href="http://http://fatic.uvigo.es">http://http://fatic.uvigo.es</a>		
General description	This course provides skills in design, management and leadership of technological projects. This includes detection of needs, technological surveys, team creativity techniques, project management, property definition and protection, and business models. The course is taught in Spanish and English.		

## Competencies

Code	
B7	CG7: The ability to analyze and assess the social and environmental impact of technical solutions.
B8	CG8: To know and apply basic elements of economics and human resources management, project organization and planning, as well as the legislation, regulation and standarization in Telecommunications.
C54	(CE54/PY1) The ability to elaborate the proposal of technical projects according to the specified requirements in a public competitive bidding.
C55	(CE55/PY2) The ability for technical direction of telecommunication project.
C56	(CE56/PY3) The ability to manage telecommunication project human resources and economic.
C57	(CE57/PY4) The ability to elaborate technical reports and for the follow up of a telecommunication project.

## Learning outcomes

Expected results from this subject	Training and Learning Results	
- To analyze the technical and economic feasibility of a project. Project budgets.	B7 B8	C55 C56
- Learn how to find statistical information and indicators		C57
- Learn how to perform technological surveys and consulting		
- Learn how to apply the main certification regulations	B8	
- Project reporting		C54 C55 C56 C57
- Project planning and management	B8	C54 C55 C56
- Sociological and human aspects of projects.		C55 C56
- Telecommunciations, safety and environmental regulations	B7	C54

- To develop models for the creation of enterprises, products and services

B8

C55

- To propose business models in telecommunications

C56

## Contents

Topic	
Project design and management	<ul style="list-style-type: none"><li>- Definition of technical goals</li><li>- Translating goals into tasks</li><li>- Planning the project</li><li>- Project resources</li><li>- Human team. R&amp;D profiles</li><li>- Budget</li><li>- Tracking project evolution</li></ul>
Identifying and interpreting needs	<ul style="list-style-type: none"><li>- Gathering requisites</li><li>- Translating needs into technical objectives</li><li>- Technological perspective. Hype cycles</li><li>- Sources and methods for technical surveys</li></ul>
Creativity techniques	<ul style="list-style-type: none"><li>- Research, development and innovation</li><li>- Team methods to boost creativity</li><li>- Is my idea original? Formulating and evaluating it</li></ul>
Collaborative Tools	<ul style="list-style-type: none"><li>- Purpose</li><li>- Tools</li><li>- Tool-assisted collaborative techniques</li></ul>
Legal aspects	<ul style="list-style-type: none"><li>- Types of property: Intellectual and industrial</li><li>- Technological actives vs. legal property. Models, patents. Licenses</li><li>- Spanish case/international case. Europe and the US. Internationalization hints</li><li>- CIN/352/2009 regulation</li></ul>
Business models. Entrepreneurship.	<ul style="list-style-type: none"><li>- Product proposal</li><li>- Risk analysis</li><li>- Customer survey</li><li>- From the idea to the business plan</li><li>- First steps towards the creation of an enterprise</li></ul>

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## Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	24	38	62
Project based learning	4	20	24
Practices through ICT	28	36	64

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

## Methodologies

	Description
Lecturing	Oral presentation of the main concepts of the course by the professors, supported by multimedia. Lectures by experts. Through this methodology the competencies CG7, CG8, CE54, CE55, CE56 and CE57 are developed.
Project based learning	Group project to be presented during class hours A of the last week. Through this methodology the competencies CE54, CE55, CE56 and CE57 are developed.
Practices through ICT	Practice on aspects of specification of requisites, creativity and business plans (in groups) and project planning using computer tools (individual). Through this methodology competencies CE54, CE55, CE56 and CE57 are developed.

## Personalized assistance

Methodologies	Description
Lecturing	The professors will be available during tutoring hours to clarify any doubts on master session contents. Tutoring hours will be published at the beginning of the course.

Project based learning All techniques in the course will be applied to the creation and planning of a project. The project will be performed in groups. At the beginning of the course, the professors will notify a working field for the course (ex. medical applications, intelligent furniture). Projects will focus on product proposals in that specific working field. Nevertheless, the professors will track individual performance, and at the final defence there may be individual questions. Personalized individual attention on these aspects will take place during official tutoring times or via e-mail at any time.

<b>Assessment</b>					
	Description	Qualification	Training and Learning Results		
Lecturing	Exam	40	B7 B8	C54 C55 C56 C57	
Project based learning	Individual defense (committee)	40		C55 C56 C57	
Practices through ICT	Evaluation of partial results+exam	20		C55 C56 C57	

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

FIRST OPPORTUNITY with CONTINUOUS EVALUATION:

- Individual exam (Maximum 4 points). Official calendar.
- Intermediate practical test (Maximum 1.5 points).
- Final project (Maximum 3.5 points).
- Participation in class (Maximum 1 points).

To pass the course, the final student score (as the sum of the previous activities) must be 5 points or more. Maximum score is 10 points. To pass the course it is necessary to get at least 1/4 in the individual exam.

The project will be performed in groups of 5-6 people. Individual scores will be assigned according to student interaction in B hours and the part corresponding to each student in the public project defence.

SECOND OPPORTUNITY with SINGLE EVALUATION:

It will consist in an exam with theoretical and practical parts in the official date. The practical part will cover the same content as the continuous evaluation along the course.

### **Sources of information**

#### **Basic Bibliography**

Carl Chatfield, Timothy Johnson, **Microsoft Project 2013 Step by Step**, 1, Microsoft Press, 2013

#### **Complementary Bibliography**

Michael Michalko, **Thinkertoys: A Handbook of Creative Thinking Techniques**, 2, Ten Speed Press, 2006

Alexander Osterwalder, Yves Pigneur, **Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers**, 1, John Wiley and Sons, 2010

Edward de Bono, **Six Thinking Hats**, 2, Back Bay Books, 1999

### **Recommendations**

### **Contingency plan**

#### **Description**

EXCEPTIONAL MEASURES

Due to the uncertain evolution of the COVID-19 alert, University of Vigo has established an exceptional planning that will be activated when the administration or the university itself consider it necessary, while guaranteeing remote or partially remote tutoring and advice.

## METODOLOGY ADAPTATION

Recorded lectures for A groups will be published at Faitic.

For B groups, communication channels will be established via Campus Remoto, Faitic or other tools.

Tutoring will take place via electronic means (e-mail, Campus Remoto, Faitic fora, etc.) under appointment.

## ASSESSMENT ADAPTATION

In case of remote teaching, assessment will be modified as follows:

- Individual exam (Maximum 2 points). Official calendar.
  - Interview about partial project results (Maximum 2 points).
  - Final project (Maximum 6 points).
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