



IDENTIFYING DATA

(*)Xestión e dirección tecnolóxica

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|---------------------|---|-----------|------|------------|
| Subject | (*)Xestión e dirección tecnolóxica | | | |
| Code | V05G300V01801 | | | |
| Study programme | (*)Grao en Enxeñaría de Tecnoloxías de Telecomunicación | | | |
| Descriptors | ECTS Credits | Choose | Year | Quadmester |
| | 6 | Mandatory | 4th | 2nd |
| Teaching language | Spanish | | | |
| Department | | | | |
| Coordinator | González Castaño, Francisco Javier | | | |
| Lecturers | Fernández Hermida, Xulio García Duque, Jorge González Castaño, Francisco Javier | | | |
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| Web | http://http://fatic.uvigo.es | | | |
| 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 entrepreneurship strategies. | | | |

Competencies

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|------|--|
| Code | |
| A1 | CG1: The ability to write, develop and sign projects in the field of Telecommunication Engineering, according to the knowledge acquired as considered in section 5 of this Law, the conception and development or operation of networks, services and applications of Telecommunication and Electronics. |
| A2 | CG2: The knowledge, comprehension and ability to apply the needed legislation during the development of the Technical Telecommunication Engineer profession and aptitude to manage compulsory specifications, procedures and laws. |
| A4 | CG4: The ability to solve problems with initiative, to make creative decisions and to communicate and transmit knowledge and skills, understanding the ethical and professional responsibility of the Technical Telecommunication Engineer activity. |
| A5 | CG5: The knowledge to perform measurements, calculations, assessments, appraisals, technical evaluations, studies, reports, task scheduling and similar work to each specific telecommunication area. |
| A6 | CG6: The aptitude to manage mandatory specifications, procedures and laws. |
| A7 | CG7: The ability to analyze and assess the social and environmental impact of technical solutions. |
| A8 | 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. |
| A9 | CG9: The ability to work in multidisciplinary groups in a Multilanguage environment and to communicate, in writing and orally, knowledge, procedures, results and ideas related with Telecommunications and Electronics. |
| A63 | (CE54/PY1) The ability to elaborate the proposal of technical projects according to the specified requirements in a public competitive bidding. |
| A64 | (CE55/PY2) The ability for technical direction of telecommunication project. |
| A65 | (CE56/PY3) The ability to manage telecommunication project human resources and economic. |
| A66 | (CE57/PY4) The ability to elaborate technical reports and for the follow up of a telecommunication project. |
| B2 | To approach a new problem considering first the essential and then the secondary aspects |
| B4 | The ability to use software tools that support problem solving in engineering |
| B5 | The ability to use software tools to search for information or bibliographical resources |

Learning aims

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|--|-------------------------------|----|
| Expected results from this subject | Training and Learning Results | |
| Interpreting needs as technological problems | A4 | B2 |

| | | |
|---|--------------------------------------|----|
| Identifying and handling relevant sources for technological surveys | A66 | B5 |
| Techniques to boost team creativity | A4 A9 A65 | |
| Design and management of large-scale technological projects | A1 A5 A63 A64 A65 A66 | |
| Choosing and using project management tools | | B4 |
| Management of R&D human resources | A4 A8 A9 A64 A65 | |
| Legal aspects | A2 A4 A6 A7 A8 | |
| First steps towards the creation of a start-up | A2 A4 A6 A8 | |

Contents

Topic

| | |
|------------------------------------|--|
| Identifying and interpreting needs | <ul style="list-style-type: none"> - Gathering requisites - Translating needs into technical objectives - Technological perspective. Hype cycles - Sources and methods for technical surveys |
| Creativity techniques | <ul style="list-style-type: none"> - Research, development and innovation - Team methods to boost creativity - Is my idea original? Formulating and evaluating it |
| Project design and management | <ul style="list-style-type: none"> - Project motivation - Enumerating technical goals - Translating goals into tasks - Planning the project - Project resources and budgets - Tracking project evolution - CIN/352/2009 regulation |
| Team management | <ul style="list-style-type: none"> - R&D teams: roles and profiles - Multidisciplinarity - Management techniques - Performance analysis |
| Entrepreneurship | <ul style="list-style-type: none"> - From the idea to the business plan - Looking for capital - Technological partnerships - First steps towards the creation of an enterprise |
| Legal aspects | <ul style="list-style-type: none"> - Types of property: Intellectual and industrial - Technological actives vs. legal property. Models, patents. Licenses - Spanish case/international case. Europe and the US. Internationalization hints - Ethic and professional responsibility - Social and medioambiental impact - Other regulatory aspects |
| (*)- | (*)- |

Planning

| | Class hours | Hours outside the classroom | Total hours |
|------------------------------------|-------------|-----------------------------|-------------|
| Master Session | 22 | 26 | 48 |
| Projects | 4 | 20 | 24 |
| Troubleshooting and / or exercises | 2 | 12 | 14 |
| Practice in computer rooms | 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 |
| Master Session | Oral presentation of the main concepts of the course by the professors, supported by multimedia. Lectures by experts |
| Projects | Personal project (individual or in groups) to be presented during class hours A of the last week |
| Troubleshooting and / or exercises | Brief individual assignments on the topics of the master sessions |
| Practice in computer rooms | Práctica on aspects of specification of requisites, creativity and project design and tracking using computer tools |

Personalized attention

| Methodologies | Description |
|------------------------------------|---|
| Projects | - The professors will publish a timetable to attend the students individually at their offices - Course documentation (slides employed in the classroom, homework, questionnaires of practical assignments, documentation for the seminars, recommended lectures) will be available through the TEMA platform (http://faitic.uvigo.es) |
| Troubleshooting and / or exercises | - The professors will publish a timetable to attend the students individually at their offices - Course documentation (slides employed in the classroom, homework, questionnaires of practical assignments, documentation for the seminars, recommended lectures) will be available through the TEMA platform (http://faitic.uvigo.es) |

| Assessment | | |
|------------------------------------|--|---------------|
| | Description | Qualification |
| Master Session | Short exam, evaluation of proactivity in the classroom | 25 |
| Projects | Public defense | 30 |
| Troubleshooting and / or exercises | Correction by the professors | 5 |
| Practice in computer rooms | Evaluation of partial and final results. Self-evaluation | 40 |

Other comments on the Evaluation

Sources of information

- V. Chiesa (2001), R&D Strategy and Organisation, Imperial College Press
- R. Florida, J. Goodnight, Managing for Creativity, Harvard Business Review
- <https://www.openproject.org/about>
- M. Michalko, Thinkertoys: A Handbook of Creative-Thinking Techniques (2nd edition, ISBN-10: 1580087736 | ISBN-13: 978-1580087735)
- A. Osterwalder, Y. Pigneur, Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers (ISBN: 978-2-8399-0580-0)

Recommendations