



IDENTIFYING DATA

Technology Management

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|---------------------|---|-----------|------|------------|
| Subject | Technology Management | | | |
| Code | V05G300V01801 | | | |
| Study programme | (*)Grao en Enxeñaría de Tecnoloxías de Telecomunicación | | | |
| Descriptors | ECTS Credits | Choose | Year | Quadmester |
| | 6 | Mandatory | 4th | 2nd |
| Teaching language | Spanish Galician | | | |
| Department | | | | |
| Coordinator | González Castaño, Francisco Javier | | | |
| Lecturers | Díaz Redondo, Rebeca Pilar Fernández Hermida, Xulio Fernández Vilas, Ana González Castaño, Francisco Javier | | | |
| E-mail | javier@det.uvigo.es | | | |
| Web | http://http://faitic.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

| | | |
|--|-------------------------------|----|
| 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 | - Gathering requisites - Translating needs into technical objectives - Technological perspective. Hype cycles - Sources and methods for technical surveys |
| Creativity techniques | - Research, development and innovation - Team methods to boost creativity - Is my idea original? Formulating and evaluating it |
| Project design and management | - Definition of technical goals - Translating goals into tasks - Planning the project - Project resources - Human team. R&D profiles - Budget - Tracking project evolution |
| Business models | - Product proposal - Risk analysis - Customer survey - Business plan |
| Entrepreneurship | - From the idea to the business plan - Looking for capital - Technological partnerships - First steps towards the creation of an enterprise |
| Legal aspects | - Types of property: Intellectual and industrial - Technological actives vs. legal property. Models, patents. Licenses - Spanish case/international case. Europe and the US. Internationalization hints - CIN/352/2009 regulation |

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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 |

*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 | Exam | 25 |
| Projects | Individual defense (committee) | 30 |
| Troubleshooting and / or exercises | Correction by the professors | 5 |
| Practice in computer rooms | Evaluation of partial results+exam | 40 |

Other comments on the Evaluation

The exam will take place in the official date. It will consist of two parts, with the same weight in the final score: a written part covering the whole course content and an oral part on the project of the current course. The project assignment must be handed to the professors three days before the exam date.

Competencies considered in the assessment process:

Exam: all

Evaluation of partial results in lab practice & problems: A4, A9, B2, B4, B5

Project: A4, A9, A63, B2, B4, B5

Note: in case problems will not be proposed, their weight in the assessment process will be transferred to the project.

Sources of information

- V. Chiesa (2001), R&D Strategy and Organisation, Imperial College Press
- R. Florida, J. Goodnight, Managing for Creativity, Harvard Business Review
- 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