



Teaching Guide

| Teaching Guide | | | | |
|--------------------------|--|--------|------------------------|-----------|
| Identifying Data | | | | 2023/24 |
| Subject (*) | AI Project Management | | Code | 614544021 |
| Study programme | Máster Universitario en Intelixencia Artificial | | | |
| Descriptors | | | | |
| Cycle | Period | Year | Type | Credits |
| Official Master's Degree | 2nd four-month period | First | Obligatory | 3 |
| Language | English | | | |
| Teaching method | Hybrid | | | |
| Prerequisites | | | | |
| Department | Ciencias da Computación e Tecnoloxías da Información | | | |
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| Lecturers | Garabato Míguez, Daniel | E-mail | daniel.garabato@udc.es | |
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| General description | The main objective of this subject is to learn and work on the processes involved in the management of artificial intelligence projects, taking into account both the software project management dimension and the particularities of artificial intelligence projects, with a comprehensive view of quality management that includes not only technical aspects but also ethical and legal aspects. Following this structure, the aim is to transmit and involve the students in all the necessary steps to obtain an artificial intelligence system from the point of view of project management, providing a global vision of the methodologies, processes and techniques for the development and management of intelligent systems. Students will be able to carry out the necessary activities for the planning and monitoring of a project in this field, both from the point of view of choosing activities, resources and technologies as well as the selection or design of the tools and variables for the correct evaluation and control of the results of all the phases of the project. In addition, basic knowledge will be provided on entrepreneurship based on artificial intelligence systems and applications and the business models involved, as well as the possibilities of financing such ventures. The different models of dissemination and diffusion of the results of AI projects will also be discussed. | | | |

Study programme competences / results

| Code | Study programme competences / results |
|------|--|
| A20 | CE19 - Knowledge of the different environments where AI based technologies can be applied and awareness of their capability to provide a differentiating added value |
| A21 | CE20 - Ability to combine and adapt different techniques, extrapolating knowledge among different application domains |
| A22 | CE21 - Knowledge of the techniques that facilitate the efficient organisation and management of AI projects in real environments, including resources management and tasks scheduling and taking into account the concepts of knowledge dissemination and open science |
| A23 | CE22 - Knowledge of the techniques that facilitate the security of data, applications and communications and the derived consequences on different application domains in AI |
| A29 | CE28 - Appropriate knowledge of the concept of enterprise, its organisation and management, and of the different business sectors, with the goal of providing solutions from the AI perspective |
| A30 | CE29 - Being able to apply knowledge, abilities and attitudes to the business and professional world, by planning, managing and evaluating projects in the scope of AI |
| B1 | CG01 - Maintaining and extending theoretical foundations to allow the introduction and exploitation of new and advanced technologies in the field of AI |
| B2 | CG02 - Successfully addressing each and every stage of an AI project |
| B4 | CG04 - Suitably elaborating written essays or motivated arguments, including some point of originality, writing plans, work projects, scientific papers and formulating reasonable hypotheses in the field |
| B5 | CG05 - Working in teams, especially of multidisciplinary nature, and being skilled in the management of time, people and decision making |
| B6 | CB01 - Acquiring and understanding knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, frequently in a research context |
| B7 | CB02 - The students will be able to apply the acquired knowledge and to use their capacity of solving problems in new or poorly explored environments inside wider (or multidisciplinary) contexts related to their field of study |



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| B9 | CB04 - The students will be able to communicate their conclusions, their premises and their ultimate justifications, both to specialised and non-specialised audiences, using a clear style language, free from ambiguities |
| B10 | CB05 - The students will acquire learning abilities to allow them to continue studying in way that will mostly be self-directed or autonomous |
| C5 | CT05 - Understanding the importance of the entrepreneurial culture and knowledge of the resources within the entrepreneur person's means |
| C8 | CT08 - Appreciating the importance of research, innovation and technological development in the socioeconomic and cultural progress of society |
| C9 | CT09 - Being able to manage time and resources: outlining plans, prioritising activities, identifying criticisms, fixing deadlines and sticking to them |

| Learning outcomes | | | |
|---|--|---|-------------------|
| Learning outcomes | Study programme competences / results | | |
| Know, understand and analyze the life cycle, the existing models and methodologies within the field of artificial intelligence that allow the design and implementation of reliable and efficient planning for the development of intelligent systems | AC20 AC21 AC29 | BC1 BC2 BC4 BC5 BC6 BC7 BC9 | CC9 |
| Know the possibilities of public and private funding for research activities in the field of innovative and frontier technologies | AC19 AC20 AC22 AC28 AC29 | BC1 BC4 BC5 BC6 BC7 BC9 BC10 | CC5 CC8 |
| Know and analyze real applications of software engineering methodologies and techniques applied to AI. Know how to use techniques and tools to support the planning and management of projects and risks | AC20 AC21 AC28 AC29 | BC2 BC4 BC5 BC6 BC7 BC9 | CC9 |
| Be able to propose a complete plan for a R&D project in AI and know the mechanisms for managing and internationalizing the results | AC19 AC20 AC21 AC22 AC28 AC29 | BC1 BC2 BC4 BC5 BC6 BC7 BC9 BC10 | CC5 CC8 CC9 |
| Know the implications of movements such as Open Access, Science and Data and the benefits of facilitating the participation of society in science and innovation (RRI) | AC19 AC20 AC21 AC22 AC28 AC29 | BC1 BC2 BC4 BC5 BC6 BC7 BC9 BC10 | CC5 CC8 CC9 |



| Contents | |
|----------|---|
| Topic | Sub-topic |
| Theory | <ul style="list-style-type: none"> - Typology of projects and models in Artificial Intelligence. - Introduction to the development model in Machine Learning. - Development and management methodologies for Intelligent Systems. - Conception, preparation, and financing of R+D+i projects in AI. - Entrepreneurship concepts and their application in AI: business models and methodologies. - Publication of results and Open Science, Open Data, and society participation (RRI) movements. - Science dissemination and internationalization. |
| Practice | AI project planning and monitoring simulation |

| Planning | | | | |
|---|--|--------------------------------------|-------------------------------|-------------|
| Methodologies / tests | Competencies / Results | Teaching hours (in-person & virtual) | Student's personal work hours | Total hours |
| Guest lecture / keynote speech | A20 A21 A22 A23 A29 A30 B1 B2 B4 B5 B6 B7 B9 B10 C5 C8 C9 | 10 | 10 | 20 |
| Laboratory practice | A22 A30 B2 B4 B5 B7 B9 C9 | 8.5 | 17 | 25.5 |
| Problem solving | A22 A29 A30 B2 B4 B5 B7 B9 C9 | 2 | 15.5 | 17.5 |
| Objective test | A20 A21 A22 A23 A29 A30 B1 B2 B4 B5 B6 B7 B9 B10 C5 C8 C9 | 1 | 10 | 11 |
| Personalized attention | | 1 | 0 | 1 |
| (*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. | | | | |

| Methodologies | |
|--------------------------------|--|
| Methodologies | Description |
| Guest lecture / keynote speech | The teacher presents a topic to the students with the objective of providing a set of information with a specific scope |
| Laboratory practice | The professor presents the students with a problem or problems of a practical nature, the resolution of which requires the understanding and application of the theoretical-practical contents presented. Students can work on the solution individually or in groups |
| Problem solving | Students are given practical projects whose scope requires that a significant part of the student's total dedication to the subject. In addition, due to the scope of the work to be done, students are required to apply not only managerial skills but also technical skills. This item will be assessed together with the laboratory practices item |
| Objective test | Exam to assess both the theory and the practice of the subject |

| Personalized attention | |
|--|---|
| Methodologies | Description |
| Laboratory practice Guest lecture / keynote speech Problem solving | The development of the practices will be monitored during the reserved hours in the schedule (laboratory sessions). In addition, to address those particularly difficult problems, the time slots available for student's attention can also be used. |



| Assessment | | | |
|---------------------|---|---|---------------|
| Methodologies | Competencies / Results | Description | Qualification |
| Laboratory practice | A22 A30 B2 B4 B5 B7 B9 C9 | The professor presents the students with a problem or problems of a practical nature, the resolution of which requires the understanding and application of the theoretical-practical contents presented. Students can work on the solution individually or in groups | 50 |
| Objective test | A20 A21 A22 A23 A29 A30 B1 B2 B4 B5 B6 B7 B9 B10 C5 C8 C9 | The questions of the theoretical exam will focus on the specific contents that were developed in the subject regarding its competences and that can be acquired both in the expository and interactive part | 50 |

| Assessment comments |
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| <p>In order to pass the subject, students must pass both the theory and the practice of the subject separately. The practices are not recovered in July; except in those cases in which the student reaches 40% of the maximum grade of the practices, being then allowed to develop and deliver all the practices under a new case study specifically raised for a possible second-chance assessment. In this case, the new practical case will be uploaded to the virtual platform two weeks before the theoretical exam of the subject. In order to evaluate the assignments delivered by the students, the degree of achievement of the competences will be assessed and, in particular, the implementation of the contents provided by the subject to such competences. In addition, the transversal competences will be assessed in case they are required for the development of these works.</p> <p>The questions of the theoretical exam will focus on the specific contents that were developed in the subject regarding its competences and that can be acquired both in the expository and interactive part. The average duration of the exam is approximately 2 hours and may consist of multiple-choice questions, short questions and case study problems. The exam will evaluate the degree of assimilation of the teaching objectives established in the syllabus of the subject.</p> <p>There will be no partial exam.</p> <p>Once both parts have been passed separately, each part will account for 50% of the final grade.</p> <p>In order to receive a "NOT PRESENTED" as evaluation, one of the following conditions must be met:</p> <ol style="list-style-type: none">1. Not having attended at least 85% of the practices of the subject.2. Not having taken the theoretical exam of the subject despite having passed the practices of the subject.3. Not having taken the theoretical exam of the subject and having communicated explicitly and by means of a formal written notification to the person in charge of the subject that the student has decided to abandon the subject when, even having taken at least 80% of the practices of the subject, they have not been passed. <p>Weight of the continuous evaluation in the second-chance assessment (July examination):</p> <ol style="list-style-type: none">1. The grade obtained in the practices during the first-chance is kept, as well as its weight in the final grade. <p>The professors will facilitate, to the best possible option and within the schedules established for the subject, attendance to the theory and practice groups that best fit the needs of the students who are enrolled part-time, for whom the form of evaluation established here also applies. Students with academic waiver of attendance exemption must attend all the assessment tests.</p> <p>In case of fraudulent performance of exercises or tests, once it is demonstrated, will imply a failing grade (numerical grade 0) in the call in which it is committed, whether the commission of the fault occurs in the first opportunity or in the second one.</p> <p>The subject will be taught in English. The theory lectures will be given by USC and broadcasted to all students. There will be a specific face-to-face interactive teaching group at each university (USC-UDC-UVigo).</p> |

| Sources of information | |
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| Basic | |
| Complementary | |

| Recommendations |
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| Subjects that it is recommended to have taken before |
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| Subjects that are recommended to be taken simultaneously |



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| Subjects that continue the syllabus |
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| Other comments |
| <p>In order to make the most of the subject, students are recommended to actively follow the classes and to participate in the different activities and use the personalized attention to solve any doubts or questions that may arise. As stated in the different regulations applicable to university teaching regarding gender perspective, in this subject non-sexist language will be used, the intervention of male and female students in class will be encouraged, etc. Likewise, we will work to identify and modify sexist prejudices and attitudes, promoting values of respect and equality. In general, we will try to detect situations of discrimination, for example, for reasons of gender, and we will propose actions and measures to correct them.</p> |

(*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.