

Academic Year/course: 2022/23

69162 - Research Seminars

Syllabus Information

Academic Year: 2022/23

Subject: 69162 - Research Seminars

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

Degree: 615 - Master's in Robotics, Graphics and Computer Vision/ Robótica, Gráficos y Visión por Computador

ECTS: 3.0

Year: 1

Semester: Second semester

Subject Type: Optional

Module:

1. General information

1.1. Aims of the course

The basic objective is to know and understand the state of the art on various topics, within the lines of research in robotics, graphics and computer vision. The student will develop the ability to understand and analyze oral research presentations in English, as well as articles from magazines and specialized conferences, which are the basis to begin a research, development and / or innovation career.

These approaches and objectives are aligned with some of the Sustainable Development Goals, SDG, of the 2030 Agenda (<https://www.un.org/sustainabledevelopment/es/>) and certain specific goals, in such a way that the acquisition of the Learning outcomes of the subject provides training and competence to the student to contribute to a certain extent to their achievement:

- Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
 - Target 8.2 Achieve higher levels of economic productivity through diversification, technological modernization and innovation, including by focusing on high value-added and labor-intensive sectors
 - Target 8.3 Promote development-oriented policies that support productive activities, the creation of decent jobs, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro, small and medium-sized enterprises, including through access to financial services.
 - Target 8.6 By 2030, significantly reduce the proportion of young people who are not employed and do not study or receive training
- Goal 9: Industry, innovation and infrastructure
 - Target 9.5 Increase scientific research and improve the technological capacity of industrial sectors in all countries, particularly developing countries, including by fostering innovation and significantly increasing, by 2030, the number of people working in research and development per million inhabitants and the spending of the public and private sectors in research and development

1.2. Context and importance of this course in the degree

The degree offers advanced training in robotics, graphics and computer vision. This course allows the student to get in touch with the latest research, development and innovation results in various subjects.

1.3. Recommendations to take this course

Recommended for students interested in learning about the state of the art in robotics, graphics and vision by

computer.

2. Learning goals

2.1. Competences

Basic competences:

- CB6 ? To possess and understand knowledge that provides a basis or opportunity to be original in the development and / or application of ideas, often in a research context.
- CB8 - That students are able to integrate knowledge and face the complexity of formulating judgments based on information that, being incomplete or limited, includes reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments.
- CB9 - That students know how to communicate their conclusions and the latest knowledge and reasons that support them to specialized and non-specialized audiences in a clear and unambiguous way.
- CB10 - That students possess the learning skills that allow them to continue studying in a way that will have to be largely self-directed or autonomous.

General Competences:

- CG05 - Ability to transmit in English, orally and in writing, in a clear and unambiguous way, to a specialized audience or not, results from scientific and technological research or the most advanced field of innovation, as well as the most relevant foundations on which they are based.
- CG10 - Ability to understand, relate to the state of the art and critically evaluate scientific publications in the fields of Robotics, Graphics and / or Computer Vision.
- CG11 - Ability to manage and use bibliography, documentation, databases, software and hardware specific to the fields of Robotics, Graphics and / or Computer Vision.

2.2. Learning goals

The student must be able to:

- Understand the main contents of expert talks on research topics on robotics, vision and / or computer graphics and related topics.
- Understand the main contents of expert talks on innovation and business development related to robotics, vision and / or computer graphics and related topics.
- Understand and evaluate the main contents of research articles on robotics, vision and / or computer graphics and related topics.

2.3. Importance of learning goals

The course is essential to know the state of the art in various subjects and understand the process and current techniques used in basic research, development and innovation.

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

E02 - directed work 100%

In these works, the student will summarize the content of the different research seminars he/she has attended, and the readings recommended by the speakers, setting out the conclusions he/she has obtained. Each student will be able to select from among the seminars offered, the most appropriate to their interests, with a minimum total duration of 20 hours. The evaluation will take into account the degree of understanding and analysis of the seminars, and where appropriate, of the additional readings.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The subject has a clear content of initiation to research and innovation. The following are the teaching methodologies to be used:

- M02 - Expert talks. Presentation of content and explanation by an expert external to the University.
- M10 - Tutoring. Instructional period carried out by a tutor in order to review and discuss the materials and topics presented in classes.
- M11 - Evaluation. Set of written, oral, practical tests, projects, works, etc. used in the evaluation of student progress.
- M12 - Theoretical works. Preparation of seminars, readings, investigations, works, memories, etc. for expose or deliver in the theoretical classes.
- M14 - Theoretical study. Study of contents related to the theoretical classes: includes any activity of study that has not been computed in the previous section (studying exams, working in the library, reading complementary, problems and exercises, etc.)
- M16 - Complementary activities. They are non-academic tutoring and related voluntary training activities with the subject, but not the preparation of exams or with the qualification: readings, seminars, attendance to congresses, conferences, workshops, videos, etc.

4.2. Learning tasks

The course consists of 3 ECTS credits that correspond to an estimated student dedication of 75 hours distributed as follows:

- A01 - Master class - 28h
- A02 - Problem-solving and cases 2h
- A05 - Practical research or application work - 12h
- A07 - Study - 30h
- Evaluation 3h

4.3. Syllabus

1. Research seminars on robotics, vision and / or computer graphics and related topics.
2. Generic and / or related entrepreneurship seminars on robotics, vision and / or computer graphics.

4.4. Course planning and calendar

The seminars will be held from October to June and will be announced to students by email and on the web.