

Degree	Type	Year
Research and Innovation in Computer based Science and Engineering	OB	1

Contact

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Teaching groups languages

You can view this information at the [end](#) of this document.

Prerequisites

There are no prerequisites.

Objectives and Contextualisation

1. Introduce the fundamental concepts of research and innovation in the field of technology and engineering.
2. Outline the principles of communication in the academic domain, both in scientific publication writing and oral communication.
3. Present common methodologies and tools for the preparation, planning, and management of research and innovation projects in academic research groups, technological centers or companies.
4. Explore the mechanisms of intellectual property protection and forms of technology transfer.
5. Analyze key aspects of entrepreneurship, including management, team communication, the creation of spin-offs and their sources of funding.

Learning Outcomes

1. CA01 (Competence) Graduates will be able to design innovation and research projects in companies and technology centres, including the creation of companies.
2. KA01 (Knowledge) Graduates will be able to describe the procedures related to managing research and innovation projects in companies and technology centres in the field of engineering.
3. KA02 (Knowledge) Graduates will be able to describe the tools used for technology transfer and innovation, as well as those use to create companies in the field of engineering.
4. SA01 (Skill) Carry out innovation and development tasks in companies and technology centres, including the creation of companies.
5. SA02 (Skill) Apply research results to obtain new products or processes by assessing their commercial and industrial viability, as well as managing the intellectual property of the research and development product and its commercial use.
6. SA03 (Skill) Critically analyse the principles, values and procedures that govern the practice of the profession.
7. SA04 (Skill) Prepare technical reports and scientific articles in the field of research and innovation in engineering.

8. SA05 (Skill) Graduates will be able to give presentations on the field of engineering.

Content

1. Introduction to technological research and innovation
2. Scientific writing and academic communication
3. Methodologies and tools for research and innovation project development
4. Dissemination of research and innovation results
5. Valorization and protection of intellectual property
6. Technology transfer and start-up development

Throughout the course, students will be able to develop various activities focused on these topics.

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Preparation of written assignments	25	1	
Study for final synthesis test	15	0.6	
Teacher-directed sessions	40	1.6	
Type: Supervised			
Presential activities	12	0.48	
Type: Autonomous			
Homework and class preparation	35	1.4	
Preparation of synthesis test	15	0.6	

The course will be based on an active learning methodology. The specific details of this implementation will depend on the number of enrolled students and will be established at the beginning of the course. The specific details of the methodology will be articulated in the first session of the course. Communication and materials will be handled through the course's Moodle space.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Assignments	70%	4	0.16	CA01, SA01, SA02, SA03, SA04, SA05
Synthesis test	30%	4	0.16	KA01, KA02, SA03, SA04

- The evaluation includes theoretical and practical evaluation. This can be done through theoretical and practical activities such as exams or assignments that students can hand in and present in class.
- Depending on the number of students, the evaluation system and activities can vary, which will be communicated at the beginning of the course. The given description here is orientative.
- This course does not implement credit-by-exam assessment.
- Non-evaluable grade (NA): Only students who have not submitted any scheduled assessments, individually or as part of a team, can apply for a non-evaluable grade on their transcript.
- Honors grade (MH): Honors are decided by the faculty responsible for the course. UAB regulations specify that an honors grade can only be granted to students with a final grade equal or greater than 90%, and only to 5% of enrolled students. If the number of students with a final grade above 9 is above 5% of the total enrollment, students will be prioritized based on their (1) final exam grade and (2) their final grade.
- Students retaking the course can seek to validate the part of their grades corresponding to assignments or exams, in both cases as a block, if they have a passing grade for that block.
- Without prejudice to other disciplinary measures that may be deemed appropriate, irregularities committed by the student that could lead to a variation in the grade of an evaluation act will be graded with a zero. Therefore, copying, plagiarism, cheating, allowing copying, etc., in any of the evaluation activities will result in failing it with a zero. Evaluation activities graded in this manner and by this procedure will not be recoverable. If it is necessary to pass any of these evaluation activities to pass the course, the course will be directly failed, without the opportunity to recover it in the same academic year.
- Use of AI - This course allows the use of Artificial Intelligence (AI) technologies exclusively for support tasks, such as bibliographic research or the extraction and synthesis of information. The student must clearly identify which parts have been generated using this technology, specify the tools used, and include a critical reflection on how these tools have influenced the process and the final outcome of the activity. Lack of transparency in the use of AI in graded activities will be considered academic dishonesty and may result in partial or total penalties in the activity's grade, or more severe sanctions in serious cases.

Bibliography

1. Technology Transfer: From Invention to Innovation (2a edició) - H. Thomas and D. Isaksen
2. Intellectual Property Strategy (2a edició) - J. P. Buckley
3. The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail - C. M. Christensen
4. The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses - E. Ries
5. Project Management for Research and Development: Guiding Innovation for Positive R&D Outcomes - L. H. Kester
6. Academic Writing and Publishing: A Practical Handbook - J. Hartley
7. Presenting Your Research: Conferences, Symposiums, Poster Presentations, and Beyond - L. P. Heiberger and S. A. Vick
8. Entrepreneurship: Successfully Launching New Ventures - B. R. Barringer and R. D. Ireland

Will be extended at the beginning of the course.

Software

Will be specified at the beginning of the course.

Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject.

Name	Group	Language	Semester	Turn
(SEMm) Seminars (master)	1	English	first semester	afternoon
(TEm) Theory (master)	1	English	first semester	afternoon