

Degree	Type	Year
Nanoscience and Nanotechnology	OT	4

Contact

Name: Ricard Esparza Masana

Email: ricard.esparza@uab.cat

Teachers

Aina Pont Farràs

Javier Garriga Fortuño

Juan Carlos Gallego Garcia

Teaching groups languages

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

Prerequisites

Basic knowledge of calculus, algebra and functions.

Objectives and Contextualisation

The course aims to provide a series of knowledge in relation to the conceptual framework of the company and the economic system in which it operates, as well as the analysis and approach of microeconomic and management techniques and models, making special emphasis on those areas linked to technology-based companies. It will seek to provide a theoretical-practical vision that students can relate to current challenges and situations in the academic and sectoral field of their studies.

Competences

- Adapt to new situations.
- Apply the concepts, principles, theories and fundamental facts of nanoscience and nanotechnology to solve problems of a quantitative or qualitative nature in the field of nanoscience and nanotechnology.
- Communicate orally and in writing in one's own language.
- Demonstrate knowledge of the concepts, principles, theories and fundamental facts related with nanoscience and nanotechnology.

- Lead and coordinate work groups.
- Manage the organisation and planning of tasks.
- Obtain, manage, analyse, synthesise and present information, including the use of digital and computerised media.
- Propose creative ideas and solutions.
- Recognise the terms used in the fields of physics, chemistry, biology, nanoscience and nanotechnology in the English language and use English effectively in writing and orally in all areas of work.
- Resolve problems and make decisions.
- Show initiative and an enterprising spirit.
- Show motivation for quality.
- Show sensitivity for environmental issues.
- Work correctly with the formulas, chemical equations and magnitudes used in chemistry.

Learning Outcomes

1. Adapt to new situations.
2. Communicate orally and in writing in one's own language.
3. Describe marketing activity in a company: market, marketing, advertising
4. Describe the basic diagrams of financial activity differentiating between investment and funding
5. Describe the classes and functional areas of a business.
6. Describe the institutional and legal framework of a company.
7. Describe the main aspects of administrative management: human resources, business strategy and organisational design.
8. Describe the main characteristics of management and direction of technological companies.
9. Describe the main elements of economics (production, costs, profits).
10. Identify and analyse the main elements of the business concept in relation to the financial system in which it operates: transaction and coordination costs, business function, types of company and social responsibility
11. Identify problems and design solutions in the field of organisation, paying special attention to the activities of administrative management, human resources, organisational design, strategies and project planning.
12. Lead and coordinate work groups.
13. Manage the organisation and planning of tasks.
14. Obtain, manage, analyse, synthesise and present information, including the use of digital and computerised media.
15. Present reports in English.
16. "Propose and resolve problems in the different functional areas of a company, production, costs, investment, funding and marketing; using the adequate business management techniques."
17. Propose creative ideas and solutions.
18. Resolve problems and make decisions.
19. Show initiative and an enterprising spirit.
20. Show motivation for quality.
21. Show sensitivity for environmental issues.
22. Work correctly with the formulas, chemical equations and magnitudes used in chemistry.

Content

A. Economic context and productive structure

A.1. Economic concepts and the role of the company

A.2. Perfect competition: profit maximisation and cost minimisation

A.3. Imperfect competition: monopoly, oligopoly (competition in quantities and prices) and monopolistic competition

- B. Key concepts of investments and financing
 - B.1. Investment concepts, basic financial instruments, investment selection (VAN, IRR)
 - B.2. Investment, depreciation and cash flows
 - B.3. The sources of financing in the company and the cost of capital
- C. Technology-based business projects
 - C.1. Key concepts of innovative technology-based projects
 - C.2. Specific financing for technology-based projects
 - C.3. Intellectual and industrial protection
- D. Creation of companies
 - D.1. Strategic process and business model
 - D.2. The development of the business plan
 - D.3. Intrapreneurship or corporate entrepreneurship

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Application sessions	12	0.48	19, 20, 6, 4, 7, 9, 3, 8, 11, 21, 16, 17, 18
Theory sessions	36	1.44	6, 4, 7, 9, 3, 5, 8, 10, 11, 16
Type: Supervised			
Office hours and consultations	2	0.08	6, 4, 7, 9, 3, 5, 8, 10, 11, 16
Type: Autonomous			
Activities (individual/group)	42	1.68	1, 2, 19, 20, 15, 13, 10, 12, 21, 14, 16, 17, 18, 22
Studying hours - theory	38	1.52	6, 4, 7, 9, 3, 5, 8, 10, 11, 16

The theory lectures are focused on presenting the key contents of the topics contained in this teaching guide, presenting the theoretical vision, but at the same time seeking to identify its practical application. Practice sessions are intended for discussion and problem solving. Finally, the seminars are intended for the presentation and discussion of practical cases.

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.

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Assessment

Continuous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Continuous evaluation activities	35%	3	0.12	2, 20, 4, 8, 15, 13, 10, 11, 21, 14, 16, 17
Final exam	50%	2	0.08	6, 4, 7, 9, 3, 5, 8, 10, 11, 16
Teamwork assignment	15%	15	0.6	1, 2, 19, 20, 15, 13, 10, 11, 12, 21, 14, 17, 18, 22

Continuous Assessment System

Examinations: There will be a single final exam, which will cover 100% of the subject's content. A minimum mark of 3.5 out of 10 is required in order to average it with the rest of the assessment activities. If this mark is not achieved (and if the requirements mentioned below are met), it will be necessary to take the resit exam. The exam will account for 50% of the final course grade.

Completion and Submission of Practical Activities: Throughout the course, students will be required to submit exercises and/or other types of practical activities, which may be (at the discretion of the teaching team) individual or group-based. The overall weight of these activities will be 50% of the final course grade.

If a student, through this continuous assessment system, obtains a mark equal to or greater than 5, but does not achieve the minimum mark of 3.5 in the exam and does not attend the retake exam, the final mark will be 4.8 - Fail (and this will be recorded in the academic record).

Single Assessment System

The single assessment consists of a single exam, the mark of which will account for 100% of the course's grade. This exam will take place on the same day, at the same time and in the same rooms as the final exam for the continuous assessment.

Only students who have not participated in any continuous assessment activity may opt for the single assessment.

Retake exam

Students who have not passed the course via continuous or single assessment (but who have obtained a minimum final mark of 2.5 out of 10) will have a final opportunity consisting of a retake exam covering the entire subject. The mark obtained in this retake exam will account for 100% of the final grade for the course (other assessment activities will not be considered).

Other Considerations

Each student must attend the assessment scheduled for their group. In accordance with current regulations, assessment tests will not be rescheduled except in the exceptional cases provided for by the regulations (reasons such as exams at other institutions, previously scheduled medical appointments, travel, etc. are not included).

In the case of activities which, individually, do not account for more than 15% of the assessment, these cannot be rescheduled or retaken under any circumstances.

Without prejudice to other disciplinary measures deemed appropriate, and in accordance with current academic regulations, any irregularities committed by a student that could lead to a change in the grade will result in a mark of zero (0). For example, plagiarising, copying, allowing others to copy, etc., in an assessment activity will result in a mark of zero (0) for that activity. Assessment activities marked in this way and by this

procedure cannot be retaken. If passing any of these assessment activities is necessary to pass the subject, the subject will be failed directly, with no opportunity to retake it in the same academic year.

The dates for continuous assessment and submissions will be published on the Moodle platform and may be subject to change due to adaptation to possible incidents. Changes to the dates of activities within the working days of the academic calendar will not entitle students to rescheduling (except as provided for in the regulations). All such changes will be communicated via Moodle, as this is considered the usual platform for information exchange between lecturers and students.

Bibliography

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Shalley, C.E. et al. (2015) "The Oxford handbook of creativity, innovation and entrepreneurship". Oxford: Oxford University Press

Soriano Llobera, J.M. (2012) "Economía de la empresa". Barcelona: Universitat Politècnica de Catalunya

Suárez, A. S. (2014) "Decisiones óptimas de inversión y financiación en la empresa". Madrid: Pirámide

Varian, H.R. (2015) "Microeconomía intermedia". 9a ed. Barcelona: Antoni Bosch Editor

Software

No specialised software is required.

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
(PAUL) Classroom practices	1311	Catalan/Spanish	second semester	morning-mixed
(PAUL) Classroom practices	1312	Catalan/Spanish	second semester	morning-mixed
(PAUL) Classroom practices	1313	Catalan/Spanish	second semester	morning-mixed
(PAUL) Classroom practices	1314	Catalan/Spanish	second semester	morning-mixed
(PAUL) Classroom practices	1511	Catalan/Spanish	second semester	afternoon
(PAUL) Classroom practices	1512	Catalan/Spanish	second semester	afternoon
(PAUL) Classroom practices	2311	Catalan/Spanish	second semester	morning-mixed
(PAUL) Classroom practices	2312	Catalan/Spanish	second semester	morning-mixed
(PAUL) Classroom practices	2331	Catalan/Spanish	second semester	morning-mixed
(PAUL) Classroom practices	2332	Catalan/Spanish	second semester	morning-mixed
(PAUL) Classroom practices	2511	Catalan/Spanish	second semester	afternoon
(TE) Theory	131	Catalan/Spanish	second semester	morning-mixed
(TE) Theory	151	Catalan/Spanish	second semester	afternoon
(TE) Theory	231	Catalan/Spanish	second semester	morning-mixed
(TE) Theory	233	Catalan/Spanish	second semester	morning-mixed
(TE) Theory	251	Catalan/Spanish	second semester	afternoon