

Business Economics and Administration

Code: 104061
ECTS Credits: 6

Degree	Type	Year	Semester
2501922 Nanoscience and Nanotechnology	OT	4	0

Contact

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Use of Languages

Principal working language: spanish (spa)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: Yes

Teachers

Gemma Seda Gombau

Prerequisites

Basic knowledge of calculus, algebra and functions.

Objectives and Contextualisation

Acquisition of 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 mastery of the main economic and management techniques. That is, we want to cover the two aspects of knowledge of the subject, on the one hand the explanatory and clarifying aspect of the business phenomenon and on the other the normative and prescription aspect. In short, meet the two major objectives of the subject, one of a formative and general and another specific and applied.

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 ones 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. "Propose and resolve problems in the different functional areas of a company, production, costs, investment, funding and marketing; using the adequate business management techniques."
2. Adapt to new situations.
3. Communicate orally and in writing in ones own language.
4. Describe marketing activity in a company: market, marketing, advertising
5. Describe the basic diagrams of financial activity differentiating between investment and funding
6. Describe the classes and functional areas of a business.
7. Describe the institutional and legal framework of a company.
8. Describe the main aspects of administrative management: human resources, business strategy and organisational design.
9. Describe the main characteristics of management and direction of technological companies.
10. Describe the main elements of economics (production, costs, profits).
11. 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
12. 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.
13. Lead and coordinate work groups.
14. Manage the organisation and planning of tasks.
15. Obtain, manage, analyse, synthesise and present information, including the use of digital and computerised media.
16. Present reports in English.
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

Chapter 1: CONCEPTUAL FRAMEWORK OF THE COMPANY

1. Nature of the company and business function
2. Economic principles and business forms according to legal and socioeconomic criteria
3. The relationship between efficiency and size
4. The company and the economic system

Chapter 2: FUNCTIONAL PRODUCTION AREA: CLASSIC APPROACH AND MANAGEMENT APPROACH

1. Production function and cost function: relevant correspondences and parameters
2. Partial productivity, technical minimum and technical optimum
3. The maximization of benefits in perfect competition
4. The maximization of profits in monopoly of supply
5. Extensions of the maximization model

6. The management approach in production: the break-even point and the restrictions on production
7. Linear programming in the company: resolution by the graphic method
8. Linear programming in the company: resolution by the Simplex method

Chapter 3: FUNCTIONAL INVESTMENT AND FINANCING AREA

1. Concept of investment, basic financial instruments and investment selection criteria NPV and IRR
2. Development of the NPV and IRR criteria according to the different cash flows
3. Amortization of the investment and hypothesis of reinvestment of the cash flows
4. Decisions of acceptance-rejection and hierarchy between investments
5. Sources of financing in the company and its cost of capital
6. Effect of taxes on the capital cost of financing and the NPV
7. Other sources of financing
8. The weighted average cost of capital WACC

Chapter 4: FUNCTIONAL AREA OF COMMERCIALIZATION

1. Commercial function in the company
2. Tools of the commercial function
3. The product as a commercial policy instrument
4. Prices and publicity as instruments of commercial policy

Methodology

Although the teacher will use the master class to transmit knowledge of the core aspects of each topic, the student must be an active part of the learning process (interactive master class). In this sense, initiatives on inquiry, motivation and the process of knowledge of things will be promoted, with the student having to create them and adapt them to their own learning process. The teacher will perform tasks of guidance, guidance and reinforcement of those aspects that present greater difficulty. Students will be provided with abundant bibliographic material, including theoretical content and exercises. To encourage critical thinking, discussion and reflection on the part of the student, work groups will be set up in problem classes and seminars in order to complete the learning process through group discussion.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Master Class: Master class in a large group in which the teacher assumes the active role involving the student in the learning process of the contents exposed	30	1.2	1, 7, 5, 8, 10, 4, 6, 9, 16, 11, 12
Presencial Seminars: Workspace in small groups in which through various activities (review of contents, work, search for information, resolution of questions and problems),	5	0.2	1, 12

it delves into the content of the subject

Presential problems: space dedicated to the application of contents through the approach and resolution of problems	15	0.6	1, 12
Type: Supervised			
Preparation of problems and seminars	20	0.8	1, 7, 5, 8, 10, 4, 6, 9, 16, 11, 12
Tutorials and consultations	10	0.4	1, 16, 12
Type: Autonomous			
Exam preparation	20	0.8	1, 7, 5, 8, 10, 4, 6, 9, 11, 12
Personal work	50	2	1, 7, 5, 8, 10, 4, 6, 9, 16, 11, 12

Assessment

Continuous evaluation system

Individual written tests: at the end of the second chapter there will be an individual written test on chapters 1 and 2; this test will have a weight of 30% in the final grade. Also, at the end of the fourth chapter there will be an individual written test on chapters 3 and 4; also this test will have a weight of 30% in the final grade.

Delivery of blocks of exercises: Throughout the course, the student must submit a series of blocks of exercises proposed on homogeneous parts of the subject. The blocks of exercises will be carried out by groups of between 3 and 4 students. The weight of these blocks of exercises is 20% of the final grade.

Participation: the participation of the student will be assessed through a series of classroom controls and the completion of the corresponding seminars. Attendance to class and tutorials will also be taken into account. The weight of the participation is 20% of the final grade.

The individual written tests, the delivery of exercises and participation make up the system of continuous evaluation. For the calculation of the final grade of continuous assessment, a minimum grade of 3 will be required for the individual tests.

In the case that a student, through this system of continuous assessment, obtain a grade equal to or greater than 5, but without reaching the minimum grade of 3 in any of the partial, and not present to the recovery, the final grade will be of 4,5.

Remedial exam

Those students who have not passed the subject through continuous assessment will have one final test consisting of a test of recovery of the whole subject and in some specific cases of one of the two parties (those who have a grade equal to or greater than 5 in some of the tests).

In these cases the evaluation system of the continuous assessment will no longer be taken into account (the notes of the exercise blocks or the participation note will not be taken into account). When the exam is of the whole subject the student must take a 5 to pass. When the exam is a part, the final grade will be the average grade between the grade obtained in the recovery exam and the individual test score already passed.

In order to participate in the recovery, the student must have previously evaluated activities that involve a minimum 2/3 of the final grade of the subject.

To obtain an honors degree, in addition to obtaining a minimum grade of 9, the student must have successfully participated in the continuous assessment system.

A student will be considered as non-evaluable if he / she does not appear in any of the individual tests.

Each student must go compulsorily to the evaluation test programmed by his group. In the case of not being able to attend, for whatever reason, to any of the partial tests, their recovery will be made only on the day of the recovery test. No extraordinary tests will be scheduled.

Once the final grades are exposed in the Virtual Campus, a period of review of grades will open.

Second enrollment students must complete the same assessment process as the first enrollment students

Without prejudice to other disciplinary measures deemed appropriate, and in accordance with current academic regulations, irregularities committed by a student that may lead to a variation of the grade will be scored with a zero (0). For example, plagiarizing, copying, letting copy, ..., an evaluation activity, will imply suspending this evaluation activity with a zero (0). The evaluation activities qualified in this way and by this procedure will not be recoverable. If it is necessary to pass any of these evaluation activities to pass the subject, this subject will be suspended directly, without the opportunity to recover it in the same course.

The dates of continuous evaluation and delivery of works will be published on the virtual campus and may be subject to programming changes for reasons of adaptation to possible incidents. Always be informed in the virtual campus about these changes as it is understood that this is the usual platform for exchange of information between teachers and students.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Completion of two individual partial tests and, where appropriate, another final test, also individual, on the theoretical and practical contents of the subject	60%	0	0	1, 7, 5, 8, 10, 4, 6, 9, 14, 11, 12, 15, 18
Realization and delivery of the blocks of exercises by groups of students. You can also request a course work	20%	0	0	1, 2, 3, 19, 20, 7, 5, 8, 10, 4, 6, 9, 14, 11, 12, 13, 21, 15, 17, 18, 22
Realization of controls and seminars	20%	0	0	1, 3, 7, 5, 8, 10, 4, 6, 9, 16, 14, 11, 12, 15, 18

Bibliography

Basic bibliography

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Additional bibliography

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