

Course Syllabus

Name of course/module: Business
Mathematics

Year: 1

Code: P954001107

Coordinating professor: Roberto Gómez-Calvet

Degree program: Business Bachelor Degree in Business Management and
Administration

School: Social Sciences

Languages: English

The mission of Universidad Europea de Madrid is to offer its students a holistic education, helping them become leaders and professionals capable of responding effectively to the needs of today's global world, adding value within their career fields, and contributing to social advancement through their entrepreneurial spirit and ethical integrity. We also strive to create and transfer knowledge through applied research, thus making our own contribution to progress and putting ourselves at the forefront of intellectual, scientific, and technological development.

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1. Basic information on the course/module

ECTS	6
Credit type	Basic
Language	English
Delivery mode	Classroom
Trimester/Semester	1 st Semester

2. Presentation and contents of the course/module

Business mathematics is a subject that will provide tools to analyze economic problems. Throughout this course the student will be able to review and learn the basic concepts and tools in order to follow other courses of the degree. For instance, one cannot study Statistics, Econometrics or Financial Management without a solid knowledge of functions or linear algebra, their properties and the way they can be combined in order to build an economic model.

3. Competencies and learning outcomes

Core competencies:

- CB1: That students have demonstrated to possess and understand knowledge in an area of study that is based on general secondary education, and is usually found at a level that, although supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study.
- CB2: That the students know how to apply their knowledge to their work or vocation in a professional manner and possess the competencies that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study.
- CB5: That the students have developed those learning skills necessary to undertake further studies with a high degree of autonomy .

Cross-curricular competencies:

- CT4: Capacity for analysis and synthesis: being able to decompose complex situations in their constituent parts; also evaluate other alternatives and perspectives to find optimal solutions. The synthesis seeks to reduce complexity in order to understand it better and / or solve problems.
- CT5: Ability to apply knowledge to practice, to use the knowledge acquired in the academic field in situations as similar as possible to the reality of the profession for which they are being trained.
- CT08. Information management: Ability to search, select, analyze and integrate information from diverse sources
- CT13: Problem solving: Ability to find a solution to a confusing issue or a complicated situation without a predefined solution, which makes it difficult to achieve an end.
- CT17: Teamwork: Ability to integrate and collaborate actively with other people, areas and / or organizations to achieve common goals.

Specific competencies:

- CE21: Ability to use the necessary mathematical tools to solve economic problems and use the basic methods of calculation, algebra and programming.

Learning outcomes:

- LO1: Understanding of basic concepts related to linear algebra, differential calculation and operational research applied to the resolution of business problems.
- LO2: Analysis and realization of problems related to linear algebra, differential calculus and operational research that demonstrate the understanding of the theoretical concepts discussed

The table below shows the relation between the competencies developed during the course and the envisaged learning outcomes:

Type of educational activity	Number of hours
AF1 Master lessons	50 h
AF2 Autonomous work	20 h
AF3 Oral presentations	0 h
AF4 Case study and problema solving	40 h
AF5 Team based activities	20 h
AF6 Knowledge tests	10 h
AF7 Tutoring	10 h
AF8 Report and Project thesis	0 h
TOTAL	150 h

To develop the competencies and achieve the learning outcomes, you will have to complete the activities indicated in the table below:

Learning outcomes	Learning activity	Type of educational activity	Content
LO1, LO2	ACT1, ACT2	AF1, AF2, AF4, AF5, AF6, AF7	Topic 1 – Linear Algebra: Resolution of systems of equations and matrix analysis
LO1, LO2	ACT1, ACT2	AF1, AF2, AF4, AF5, AF6, AF7	Topic 2 – Function analysis

LO1, LO2	ACT1, ACT2, ACT3	AF1, AF2, AF4, AF5,, AF7	Topic 3- Diferential calculus
RA1, RA2	ACT1, ACT2, ACT3	AF1, AF2, AF4, AF5, AF6, AF7	Topic 4 – Integral calculation of functions with immediate integral.

When you access the course on the *Virtual Campus*, you'll find a description of the activities you have to complete, as well as the deadline and assessment procedure for each one.

4. Monitoring and assessment

The following table shows the assessable activities, their respective assessment criteria, and the weight each activity carries towards the final course grade.

Assessable activity	Assessment criteria	Weight (%)
<i>Activity 1: Master lessons, attendance, participation</i>	<ul style="list-style-type: none"> Knowledge test 	50%
<i>Activity 2: Case study. Cooperative learning.</i>	<ul style="list-style-type: none"> Class developed activities 	25%
<i>Activity 3: Problem-based learning. Problem solution</i>	<ul style="list-style-type: none"> Exercises, Project 	25%

When you access the course on the *Campus Virtual*, you'll find a description of the activities you have to complete, as well as the deadline and assessment procedure for each one.

4.1. First exam period

To pass the course in the first exam period you should:

In ordinary call (first exam), the final qualification will be made by adding the qualifications of the different types of evaluation, in the corresponding weighting. To pass the subject it will be enough to reach a global weighted grade of 5, which would mean exceeding 50% of the subject. However, to apply this weighting, it is ESSENTIAL that at least an average of 5 points out of 10 has been obtained in the part corresponding to the KNOWLEDGE TESTS. In case of not reaching this grade, the student must take a new test/s of knowledge in extraordinary call, qualifying the subject in the ordinary call as FAIL.

Any student who does not match or exceed 50% of the subject, or does not reach a grade of 5 out of 10 in the knowledge tests, will be qualified in the ordinary call as “fail”, since the continuous evaluation will prevent considering it as not presented. Consequently, it must be submitted to the extraordinary call.

If the subject is graded as a FAIL in first exam period for lack of compliance with the attendance percentages, the teacher will indicate to the student what tests, works or activities the student should perform as a complement to pass the subject.

Attendance: For students who attend face-to-face teaching, the obligation to justify at least 50% attendance at classes is established as a necessary condition of the evaluation process and to fulfill the student's right to receive advice, assistance and academic monitoring by the teacher. For these purposes, students must use the technological system that the University puts at their disposal, or the control system determined by the teacher, to accredit their daily attendance to each of their classes. These systems will also serve to guarantee objective information about the active role of the student in the classroom. The lack of accreditation by the means proposed by the University of, at least, 50% of attendance, will empower the teacher to qualify the subject as fail in the ordinary call, according to the qualification system provided for in this regulation. All this, without prejudice to other requirements or higher percentages of assistance that each faculty may establish in the teaching guides or in its internal regulations.

4.2. Second exam period

To pass the extraordinary call subject the student must:

In case of having passed the different evaluation percentages in the ordinary call except the knowledge test with the minimum grade of 5 points out of 10, and as long as the overall grade of the subject in ordinary call exceeds the average of 5 points out of 10, the extraordinary call will be limited to the completion of a KNOWLEDGE TEST, which will account for 50% of the overall grade, taking into consideration the grades obtained in the different sections of the ordinary call to finally establish the final grade for the subject.

If the Activities or the Project were also suspended/not presented, you should carry out the missing activities and deliver them, as well as the Project, at least 2 days before the knowledge test date.

5. Bibliography

Here is the recommended bibliography:

DOWLING, EDWARD T. 1992. Schaum's outline of theory and problems of introduction to mathematical economics.

ALEGRE, P. 1993. Ejercicios resueltos de matemáticas empresariales 2.

ALEGRE, P. 1991. Ejercicios resueltos de matemáticas empresariales 1.

HAEUSSLER, ERNEST F. 2008. Matemáticas para la administración y economía.

GARCÍA PINEDA P. y otros. 2007 . Iniciación a la Matemática Universitaria. Curso 0.

TAN. S.T. 1998. Matemática para Administración y Economía.

6. How to communicate with your teacher

Whenever you have a question about the content or activities, don't forget to post it to your course forum so that your classmates can read it.

You might not be the only one with the same question!

If you have a question that you only want to ask your professor, you can send him/her a private message from the *Campus Virtual (Blackboard)*. And if you need to discuss something in more detail, you can arrange an advisory session with your professor.

Email: roberto.gomezcalvet@universidadeuropea.es

It's a good idea to check the course forum on a regular basis and read the messages posted by your classmates and professors, as this can be another way to learn.

7. Study recommendations

When you study at university, you need to plan and be consistent from the first week. It's very useful to exchange experiences and opinions with professors and other students, as this will help you develop core competencies such as flexibility, negotiating skills, teamwork, and, of course, critical thinking.

To help you, we recommend using a general method of study based on the following points:

- Study systematically and at a steady pace.
- Attend class and regularly check the course forum on the *Campus Virtual* so that you keep up to date with what's happening.
- Participate actively in the course by sharing your opinions, doubts and experiences relating to the topics covered and/or suggesting new topics of interest for discussion.
- Read the messages posted by your classmates and/or professors.

Active participation in physical and virtual classroom activities is of special interest and academic value. You can participate in many different ways: asking questions, giving your opinion, doing all the activities your professor suggests, taking part in collaborative activities, helping your classmates, etc. This way of working requires effort, but it will help you get better results as you develop your competencies.

Annexes with detailed information on the *Campus Virtual*

Annex 1

Specific regulation of the subject

The students can consult the whole regulation corresponding to the European University of Valencia in the following link: <https://valencia.universidadeuropea.es/soy-alumno-uev/informacion-academica/normativa> .

The total or partial plagiarism in the activities is a serious fault. As such, it turns out to be typified in the internal regulation of the European University, being stipulated that the applicable sanctions range from the immediate failure of the subject without any possibility of elaboration of any written paper until the Extraordinary Exam Period, until the opening of the case file.