

Applied Mathematics for Business

UGRA_016390

Departments	Data, Analytics, Technology and Artificial Intelligence (DATA), Dept. of Operations, Innovation & Data Sciences
Teaching Languages	English, Spanish, Catalan
ECTS	6
Teacher responsible	Jordi Montserrat Adell - jordi.montserrat4@esade.edu Marius Oltean - marius.oltean@esade.edu

Program Learning Objectives

BBA25-Bachelor of Business Administration (BBA)

- General Management Skills
 - Apply fundamental concepts and tools from different business management disciplines to explain a business-related problem.
- Systemic Thinking
 - Analyse a business problem using tools, frameworks and perspectives in an integrative way.
- Self-Development
 - Develop one's own work by being consistent and flexible in the face of changes.

Bibliography

Sydsæter, K.; Hammond, P.; Strom, A. and Carvajal, A., Essential Mathematics for Economic Analysis, Pearson, 9781032698946

Activities

Analytical exercises
Applied Problems

Quizzes/tests

Multiple choice questions, will also be made available in the Moodle to offer further practice for any students who wish to reinforce their knowledge on each topic. These quizzes are voluntary, may be attempted any number of times, and will not contribute to students' assessment for the course.

Practical exercises with professional software
Applied and Challenge Problems to be solved with the use of a Mathematical software

Content

#	Topic
1	Topic 1: Matrices. Topic 2: Diagonalization. Topic 3: Dot Products.
2	Topic 4: Limits, Continuity and Derivatives Topic 5: Taylor Approximations and Single Integrals
3	Topic 6. Two Variable Functions. Topic 7. Partial Derivatives. Topic 8. Unconstrained Optimization. Topic 9. Constrained Optimization. Topic 10. Double Integrals.

Assessment

Tool	Assessment tool	Category	Weight %
Written and/or oral exams	Two exams	Retake and ordinary round	50.00%
In-class analysis and discussion of issues		Retake and ordinary round	15.00%
Quizzes/tests	individual exercise	Retake and ordinary round	15.00%
Group project	Exercise requiring the use of mathematical software based on a real world	Retake and ordinary round	10.00%
Written and/or oral exams	Answer questions individually	Retake and ordinary round	10.00%

PROGRAMS

BBA20-Bachelor of Business Administration (BBA) (Undergraduates: Business)
 BBA20 Year 1 (Mandatory)

BBA25-Bachelor of Business Administration (BBA) (Undergraduates: Business)
 BBA25 Year 1 (Basic)

GBD23-Double Degree in Business Administration and Law (Undergraduates: Law)
 GBD23 Year 1 (Basic)

GBD25-Double Degree in Business Administration and Law (Undergraduates: Law)
 GBD25 Year 1 (Basic)