

Course Description of Mathematics for Business Management

1. Course Name					
Business Mathematics					
2. Course Code					
To be Determined by the scientific department					
3. Semester / Year					
First Semester 2025–2026					
4. Date of Preparation of this Description					
21/9/2025					
5. Available attendance forms					
Classroom attendance					
6. Number of study hours (total) / Number of units (total):					
٣ hours / 3 units					
7. Course instructor name					
Name: Mohammed Nabeel Hadi Haboobi Email: mohammed.nab@uowa.edu.iq					
8. Course objectives					
Course objectives	<ul style="list-style-type: none"> ✓ Develop a strong foundation in mathematical concepts relevant to business and management. ✓ Apply mathematical models to solve business and economic problems. ✓ Use quantitative techniques to improve decision-making in finance and operations. ✓ Analyze statistical data to support business strategies and market research. ✓ Integrate financial mathematics into investment analysis and risk assessment. ✓ Integrate financial mathematics into investment analysis and risk assessment 				
9. Teaching and learning strategies					
Strategy	<ul style="list-style-type: none"> ✓ Interactive lectures: Explain mathematical concepts and relate them to real-life business applications. ✓ Applied problem solving: Train students to use mathematics to solve administrative and financial problems. ✓ Problem-based learning: Employ problems and case studies from the business environment. ✓ Classroom activities and discussions: Promote critical thinking and teamwork. ✓ Self-paced learning: Assign short assignments and review additional material through open sources. 				
10. Course structure					
Week	Hours	Required learning outcomes	Name of unit or topic	Learning method	Evaluation method
١	٣	Distinguish between the rules of derivatives and apply them to various mathematical problems.	Rules of Derivatives	Interactive lecture + problem solving on the board	Daily tests, practical problem solving
٢	٣	Graph functions and interpret their	Functions and	Theoretical	Function

		geometric properties.	Their Graphs	explanation + practical applications	analysis and graphing assignment + classroom activity
٣	٣	Use differentiation rules to solve mathematical problems and analyze changes.	Differentiation	Lecture + classroom exercises + applied business examples	Quick quiz + practical problem solving
٤	٣	Apply functions to solve managerial problems and make decisions.	Application of Functions in Management	Discussion of practical cases + applications on financial spreadsheets	Practical assignment (case study)
٥	٣	Analyze curves and interpret their behavior using mathematical tools.	Curve Analysis	Explanation using graphs + working groups	Quick quiz + classroom activity
٦	٣	Solve practical exercises to reinforce the understanding of previous concepts.	Exercises	Comprehensive problem solving + group review	Comprehensive homework + classroom participation
٧	٣	Explain the concept of matrices and apply basic matrix operations.	Matrices	Lecture + Algebraic operations training	Quick quiz + classroom problem solving
٨	٣	Solve linear equations using algebraic methods and matrices.	Linear Equations	Applied examples + Discussion + Problem solving	Quick assignment + short quiz
٩	٣	Differentiate between linear and nonlinear equations and use appropriate methods to solve them.	Nonlinear Equations	Lecture + Practical training + Discussion	Lecture + practical training + discussion
١٠	٣	Successfully pass the exam by utilizing the learned mathematical concepts.	Exam	Comprehensive review + Past questions	Midterm exam
١١	٣	Interpret probability theory and apply it to real-world scenarios.	Probability Theory	Lecture + Applications on practical examples + Working groups	Quick quiz + practical assignment
١٢	٣	Use algebra to solve equations and mathematical expressions.	Algebra	Theoretical explanation + Problem solving + Group activities	Homework + short quiz
١٣	٣	Apply constrained optimization concepts to find optimal solutions to problems.	Constrained Optimization	Discussion of practical cases + Application exercises	Mini project (report/problem solution) + classroom activity
١٤	٣	Enhance understanding by solving various exercises covering course topics.	Exercises	Group review + Comprehensive problem solving	Comprehensive assignment + classroom

					participation
۱۰	۳	Explain set theory and apply it in mathematical modeling.	Explain set theory and apply it in mathematical modeling.	۳	Final exam

11. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

- A. A. In-class assignments: 10 marks
- B. B. Quizzes: 10 marks
- C. C. Reports: 10 marks
- D. D. Homework: 10 marks
- E. E. Midterm exam: 10 marks
- F. F. Final exam: 50 marks
- G. G. Total = 100 marks

12. Learning and teaching resources

Required textbooks	Mathematics and Business Administration - Schaum Series
Main references	Bradley, T. (2013). <i>Essential mathematics for economics and business</i> (4th ed.). Wiley. Anthony, M., & Biggs, N. (1996). <i>Mathematics for economics and finance: Methods and modelling</i> . Cambridge University Press.
Recommended supporting books and references	Dowling, E. T. (2003). <i>Schaum's outline of mathematical methods for business and economics</i> . McGraw-Hill.
Electronic references, websites	Holmes, A., Illowsky, B., & Dean, S. (2017). <i>Introductory business statistics</i> . OpenStax. https://openstax.org/books/introductory-business-statistics