OSTIM TECHNICAL UNIVERSITY
FACULTY OF ECONOMICS AND ADMINISTRATIVE SCIENCES
DEPARTMENT OF MARKETING
COURSE SYLLABUS FORM

BUS 104 Business Mathematics II

Course Name	Course Code	Period	Hours	Application	Laboratory	Credit	ECTS
Business Mathematics II	BUS 104	Spring	3	0	0	3	5

Language of Instruction	English
Course Status	Compulsory
Course Level	Bachelor
Learning and Teaching Techniques of the Course	Lecture, Discussion, Question Answer, Problem Solving

Course Objective

This course introduces students to the mathematical concepts and applications necessary for successful business careers. the contents of the course include partial derivative of a function, chain rule, finite and infinite series, integral calculus, indefinite calculus, definite calculus and some business applications with derivatives and integral.

Learning Outcomes

The students who succeeded in this course will be able to
1. understand the derivatives and learn the chain rule
2. learn definite and indefinite series
3. understand the basic concepts of the integral calculus

Course Outline

Limits and Continuity, Derivatives, Integral Calculus, Indefinite Calculus, Definite Calculus and Some Business Applications

Weekly Topics and Related Preparation Studies		
Weeks	**Topics**	**Preparation Studies**
1	Limits and Continuity	Limits, Continuity, Continuity Applied to Inequalities
2	Limits and Continuity	Continuity Applied to Inequalities
3	Derivatives	Derivative of a function
4	Derivatives	Rules for Differentiation, The Derivative as a Rate of Change
5	Derivatives	The Product Rule and the Quotient Rule
6	Derivatives	Chain Rule, Derivatives of Logarithmic Functions, Derivatives of Exponential Functions
7	Business Applications for Derivatives	Elasticity of Demand, Revanue
8	**Mid-term Exam**	
9	Derivatives	Implicit Differentiation, Logarithmic Differentiation, Higher-Order Derivatives, The Second-Derivative Test
10	Business Applications for Derivatives	Maximum and Minimum Problems (Profit, Cost etc.)
11	Integral	Basic concepts of Integral
12	Integral	The Indefinite Integral, Integration with Initial Conditions
13	Integral	Power Rule, Specific Functions (Natural Exponential, Logarithmic)
14	Integral	Techniques of Integral, The Definite Integral
15	Business Applications for Integral	Marginal and Total (Cost, Revenue etc.)
16	**Final Exam**	

Textbook(s)/References/Materials:

Main Text Book:
Haeussler, E.F., Paul, R., Wood, R. Introductory Mathematical Analysis. Pearson, 2022.

Supplemantry Documents:
1. Calaway S., Hoffman D., Lippman D. Business Calculus. Opentextbookstore.com, 2013.
2. J.Oliver. Business Math: A-Step-by-Step Handbook. Lyryx Version 2021-B, 2021.
3. Marecek L., Intermediate Algebra, OpenStax, 2017.

Assessment		
Studies	**Number**	**Contribution margin (%)**
Attendance	14	%0
Lab	0	%0
Classroom application and performance	0	%0
Field Study	0	%0
Course-Specific Internship (if any)	0	%0
Quizzes / Studio / Critical	0	%0
Homework	0	%0
Presentation	0	%0
Projects	0	%0
Report		%0
Seminar		%0
Midterm Exam / Midterm Jury	1	%40
General Exam / Final Jury	1	%60
Total		**%100**
Success Grade Contribution of Semester Studies		%40
Success Grade Contribution of End of Term		%60
Total		%100

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ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Course hours (Including the exam week: 16 x total course hours)	16	3	48
Laboratory			
Application			
Course-Specific Internship			
Field Study			
Study Time Out of Class	16	4	64
Presentation / Seminar Preparation			
Projects			
Reports			
Homework			
Quizzes / Studio Review			
Preparation Time for Midterm Exam / Midterm Jury	1	4	4
Preparation Period for the Final Exam / General Jury	1	4	4
Total Workload/25 hours	**(120/25 = 4.8)**		
ECTS	**5**		

Relationship Between Course Learning Outcomes and Program Competencies							
No	**Learning Outcomes**	Contribution Level					
		1	**2**	**3**	**4**	**5**	
LO1	To recognize more advanced arithmetic operation					X	
LO2	To recognize the intermediate algebra					X	
LO3	To do basic and intermediate financial / business calculations					X	
LO4	To solve the equations					X	
L05	To combine maths and different business applications					X	

No	Program Competencies	Learning Outcomes					Total Effect (1-5)
		LO1	LO2	LO3	LO4	LO5	
1	Understanding the formal and informal processes associated with a business structure.						
2	Evaluate a business on the basis of all functional units.						
3	To use analytical thinking effectively in the decisions taken for the problem solving process.				4		
4	Having a vision of self-improvement and learning.			3			
5	To carry out all activities within this framework, equipped with ethics.						
6	To analyze the cases encountered by doing research and studies individually and as a team within the organization.				4		
7	To convey his thoughts and suggestions at the level of knowledge and skills he has acquired in the field of marketing to the relevant people in writing and orally.						
8	Developing effective and creative marketing mix strategies that will adapt to different market conditions and buyer types in national and international dimensions.						

Relationship Between Course Learning Outcomes and Program Competencies

9	To have the ability to interpret and analyze data, to identify problems and to suggest solutions by using the knowledge acquired in the field of marketing.							5
10	To have sufficient awareness of the universality of social rights, social justice, quality and cultural values, environmental protection, occupational health and safety.							
11	Evaluate the knowledge and skills gained by the marketing education with a critical perspective within the framework of the practices in business life.							
12	To follow and correctly interpret the current trends developing within the framework of marketing.							
Total Effect								**16**

Policies and Procedures
Web page:
Exams: The exams aim at assessing various dimensions of learning: knowledge of concepts and theories and the ability to apply this knowledge to real-world phenomena, through analyzing the situation, distinguishing problems, and suggesting solutions. The written exams can be of two types,ie. open-ended questions, which can also be in the form of problems or multiple-choice questions. Examinations are individual and must be completed without any outside assistance. Students who attempt to cheat during exams will receive a failing grade from that exam. The case could also be carried to the Dean's Office for additional disciplinary action.
Assignments: Not applicable.
Missed exams: Any student missing an exam needs to bring an official medical report to be able to take a make-up exam. The medical report must be from a state hospital.
Projects: Not applicable.
Attendance: Attendance requirements are announced at the beginning of the term. Students are usually expected to attend at least 70% of the classes during each term.
Objections: If the student observes a material error in his/her grade, he/she has the right toplace an objection to the Faculty or the Department. The claim is examined and the student is notified about its outcome.