

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

BUS 104 Business Ma	athematics 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	Lecture, Discussion, Question Answer, Problem Solving
Course	

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	imits, 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				



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	(1	120/25 = 4.8	3)				
ECTS		5					

Rela	Relationship Between Course Learning Outcomes and Program Competencies								
No	Learning Outcomes	Contribution Level							
		1	2	3	4	5			
L01	To recognize more advanced arithmetic operation					Х			
L02	To recognize the intermediate algebra					Х			
L03	To do basic and intermediate financial / business calculations					Х			
L04	To solve the equations					Х			
L05	To combine maths and different business applications					Х			



Relationship Between Course Learning Outcomes and Program Competencies							
No	Program Competencies		Learning Outcomes		Total Effect (1-5)		
		L01	LO2	LO3	L04	L05	, , , , , , , , , , , , , , , , , , ,
1	Know the basic concepts and practical information about the science of business administration and core business activities			х	х	x	3
2	Evaluate global and local issues by using ideas and concepts from the field of business administration; examine and analyze management related information and applications in line with scientific principles by using appropriate qualitative and quantitative methods; interpret and synthesise the data and find solutions to business related problems	x	х	х	х	x	5
3	Take responsibility as a member of an interdisciplinary team to solve unpredictable and complex business problems; be able to work effectively in teams of various functions and disciplines; effectively carry out project activities	x	x	х	x	x	5
4	Carry out independent studies in the field by utilizing obtained knowledge and skills	х			х	х	3
5	Set goals and objectives for the institution he/she works at; detect and solve basic problems; analyze the internal and external environment of the business; evaluate the developments, support continuous improvement and provide innovative strategies			Х	Х	x	3
6	Acquire the skill to manage activities aimed at the improvement of the employees as a leader, make decisions and implement them			х		x	2
7	Acquire the entrepreneurship skill; design and manage a business; promote innovativeness and sustainability			x		x	2
8	Maintain life-long learning activities; achieve self-improvement; follow higher level educational programs	x	x			x	3



9	Inform stakeholders with a sense of social responsibility as an individual with effective communication skills; share his/her emotions, thoughts and solutions to problems verbally and in writing; understand the behaviors and psychology of his/her colleagues			x			1
10	Use the information and communication technologies and computer software required by the field					х	1
11	Effectively use English to follow, read, write and speak about the universal information in the field of business and management sciences and be able to communicate with colleagues in a foreign language with professional proficiency	Х		х		х	3
12	Act according to the law in all his/her affairs; have a sense of professional and ethical responsibility and code of business conduct and act in line with social values					х	1
13	Be aware of the contemporary business problems as well as the interdisciplinary scope of business administration and analyze these; have the competence to understand the effects of business and management sciences on these problems on a universal, environmental, legal, social and societal level and in terms of health, security and globalization	х	х	x	x	x	5
14	Give research proposals, be able to design research studies, prepare and present research reports				х		1
15	Manage work time and personal time; fulfil the requirements of his/her duties on time	x	х	x	х	x	5
16	Have the competence to work in non- governmental organizations, private sector and public entities				Х		1
	Total Effect						42



Policies and Procedures

Web page: https://www.ostimteknik.edu.tr/business-administration-1240/907

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, i.e. 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.