

COURSE RECORD

Code	MATH 112
Name	Business Mathematics II
Hour per week	4 (4 + 0)
Credit	4
ECTS	6
Level/Year	Undergraduate/1
Semester	Spring
Type	Compulsory
Prerequisites	Math111
Description	This course is a continuation of the Math111 course, starting with the integrals of single-variable functions and integral techniques, and then multivariable calculus introduces. In this context, integral calculations, limit and derivative of multivariable functions, and double integral are taught. At the end of the semester, the student will be able to apply all these mathematical concepts to different fields of business and mathematics.
Objectives	The aim of this course is <ul style="list-style-type: none"> • To teach Mathematical issues required in business and economics • To discuss how to use these mathematical topics in real-life business and economic problems
Learning Outcomes	By the end of the semester the students will <ul style="list-style-type: none"> LO1: recognize some mathematical concepts which they need in their academic life; LO2: identify the need for applications of mathematical methods to global challenges in business, economy and social sciences; LO3: apply numerical skill on these applications; LO4: learn how to apply the studied mathematical methods to real-life business and economic problems.

CONTRIBUTION TO PROGRAMME OUTCOMES*

	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012
L01												
L02												
L03												
L04												

* Contribution Level: 0: None, 1: Very Low, 2: Low, 3: Medium, 4: High, 5: Very High

COURSE CONTENT DETAILS

W	Topic	Outcomes
1	First Meeting, Introduce the course 5.1 Antiderivatives and Indefinite Integral 5.2 Integration by Substitution	L01, L02
2	5.3 Differential Equations; Growth and Decay Continuous Compound Interest (Revisited)	L01, L02, L03
3	5.4 The Definite Integral 5.5 The Fundamental Theorem of Calculus	L01, L02
4	5.6 Area Between Curves Applications: Income Distribution, Gini Index	L02, L03, L04
5	6.1 Integration by Parts	L01, L02
6	6.2 Other Integration Methods Using a Table of Integrals, Substitution and Integral Tables, Reduction Formulas	L01
7	6.3 Applications in Business and Economics	L02, L03, L04

	Probability Density Functions, Continuous Income Stream, Future Value of a Continuous Income Stream, Consumers' and Producers' Surplus	
8	6.4 Integration of Trigonometric Functions Application	L01
9	7.1 Functions of Several Variables 7.2 Partial Derivatives	L01
10	7.3 Maxima and Minima	L02, L03
11	7.4 Maxima and Minima Using Lagrange Multipliers	L02, L03
12	7.5 Method of Least Squares Least Squares Approximation and Applications	L03, L04
13	7.6 Double Integrals over Rectangular Regions	L01, L02, L03
14	7.7 Double Integrals over More General Regions	L01, L02, L03

DERS BİLGİLERİ

Kodu	MATH 112
İsmi	İşletme Matematiği II
Haftalık Saati	4 (4 + 0)
Kredi	4
AKTS	5 ? 6
Seviye/Yıl	Lisans/1
Dönem	Bahar
Dersin Dili	İngilizce
Tip	Zorunlu
Ön Şart	Math 111
İçerik	Bu ders, Math111 dersinin devamı niteliğinde olup, tek değişkenli fonksiyonların integralleri ve teknikleri ile başlamakta ve ardından çok değişkenli fonksiyonları tanıtmaktadır. Bu kapsamda integral hesaplamaları, çok değişkenli fonksiyonların limit ve türevi ve çift katlı integral öğretilir. Dönem sonunda öğrenci tüm bu matematiksel kavramları farklı işletme ve matematiğin alanlarına uygulayabilecektir.