

Course Description	
Course Code	MAT 102
Course Name	CALCULUS II
Prerequisite Courses	
Language of the Course	
Course Coordinator	
Instructor(s)	
Course Assistants	
The aim of the course	The purpose of this course is to teach the necessary mathematical techniques used in solving engineering problems.
Course Content	Methods of integration, application of integration, area under the curve, the volume of a solid of revolution, sequences and series.

Weekly Course Content	
Week 1	Indefinite integrals and properties
Week 2	Indefinite integration methods
Week 3	Changing variables, partial integration method
Week 4	Simple fractions, reduction formulas
Week 5	Integration of rational functions, trigonometric integrals
Week 6	Definite integrals
Week 7	Applications of definite integrals
Week 8	Midterm exam
Week 9	Areas of plane regions
Week 10	Arc length calculation
Week 11	The volume of rotating objects
Week12	Surface area calculation
Week 13	Improper integrals
Week 14	Series, positive series and convergence tests for these series
Week 15	Final exam

Course Learning Outcomes	
1	Learns and applies indefinite integrals concept
2	Understands integration methods
3	Learns definite integrals, basic theorems and properties
4	Calculates integrals area, volume, the length of a curve and surface area
5	Understands series, varieties of series and specifications
6	Learns and applies improper integrals.

Contribution of the Course to Program Qualifications			Contribution Level
01	The student will have the ability to apply analytical approach, mathematics and science knowledge in software and engineering issues.		3
02	The student will have the ability to identify, define, formulate and solve a problem in software and computer systems.		5
03	The student will have gains scientific research skills in software and engineering problems, has the ability to design a system, part or process.		4
04	The student will have the ability to use the design capability, techniques and tools required for engineering applications.		3
05	The student will have the ability to design, implement and interpret experimental work and software projects by analyzing the results.		3
06	The student will have the ability to work between disciplines and teamwork.		4
07	The student will have the ability to work in international environments and adapt to different cultures.		5
08	The student will have verbal and written communication skills in Turkish and English.		4
09	The student will have the awareness of the necessity of lifelong learning and the ability to realize it.		3
10	The student will gain knowledge of legal issues with the awareness of professional and ethical responsibility.		5
11	The student will have managerial skills (leadership, organization, time and risk management, quality awareness, efficiency, etc.).		4
12	The student will have the ability to participate in social activities, to acquire regular sports habits and to use time in the best way.		4
13	The student will have the ability to find unusual ways and produce projects.		3
14	The student will have professional self-confidence, being an entrepreneur and taking initiative.		4
15	It is sensitive about the problems of the age and looks after the national interests.		4

ECTS WORKLOAD			
	Number	Duration (hours)	Number*Duration
Face to face education	14	4	56
Out-of-class study time (pre-study, reinforcement)	14	6	84
Homeworks	0	0	0
Presentation / Seminar preparation	0	0	0
Quizzes	0	0	0
Preparation for midterm exams	1	8	8
midterm exams	1	2	2
Project (Semester assignment)	0	0	0
Lab	0	0	0
field work	0	0	0
Preparation for the final exam	1	15	15
Semester final exam	1	2	2
Research	0	0	0
TOTAL WORKLOAD			167
ECTS			6

Evaluation			
SEMESTER EVALUATION		Number	Contribution Percentage
Midterm		1	100
Quiz		0	0
Homework		0	100
SEMESTER TOTAL			200
Contribution rate of mid-term evaluations to success			40
Contribution rate of the final exam to success			60
GRAND TOTAL			100

RESOURCES	
Textbook	Prof. Dr. Mustafa Balcı, Genel Matematik 1, Balcı yayınları, 2008.
Helpful Resources	Dennis G. Zill, Warren S. Wright, Calculus, Nobel yayınları, 2013