TOROS ÜNİVERSİTESİ

Faculty Of Engıneerıng
Computer And Software Engıneerıng

Course Information

MATHEMATICS II					
Code	**Semester**	**Theoretical**	**Practice**	**National Credit**	**ECTS Credit**
		Hour / Week			
MAT104	Spring	4	0	4	

Prerequisites and co-requisites	None
Language of instruction	English
Type	Required
Level of Course	Bachelor's
Lecturer	Asst. Prof. Çağdaş ALLAHVERDİ
Mode of Delivery	Face to Face
Suggested Subject	None
Professional practise (internship)	None
Objectives of the Course	The aim of this course is to enable students to learn, understand, explain and use advanced mathematical calculus and thus to assist engineering studies.
Contents of the Course	At the end of this course, the students should be able to: • Define algebraic and transcendental functions, • Use L'Hopital's rule to calculate limits of indeterminate forms, • Solve improper and proper integrals, • Solve simple first order differential equations, • Do algebra and calculus with power series, • Identify and use Taylor and Maclaurin Series, • Solve integrals numerically, • Do algebra and calculus using polar coordinates, • Do vector operations, • Calculate partial derivaties and multiple integrals.

Learning Outcomes of Course

#	Learning Outcomes
1	To be able make derivatives coming in mathematical and engineering problems
2	To be able make integrals coming in mathematical and engineering problems
3	To be able to apply mathematical knowledge and experience to real problems
4	To be able to plan time management
5	To be able to do his/her job for the interests of the society and himself/herself

Course Syllabus

#	Subjects	Teaching Methods and Technics
1	Transcendental functions: Inverse functions, natural logarithms, exponential functions	lecturing, discussing, problem solving
2	Transcendental functions: L'Hopital's rule, hyperbolic functions	lecturing, discussing, problem solving
3	Techniques of integration: Integration by parts, trigonometric integrals, trigonometric substitutions, integration of rational functions	lecturing, discussing, problem solving
4	Numerical integration	lecturing, discussing, problem solving
5	First order differential equations and their applications	lecturing, discussing, problem solving

6	Infinite sequences and series: infinite series, alternating series, power series	lecturing, discussing, problem solving
7	Infinite sequences and series: Taylor and Maclaurin series	lecturing, discussing, problem solving
8	Midterm Exam	lecturing, discussing, problem solving
9	Polar coordinates, graphing in polar coordinates	lecturing, discussing, problem solving
10	Vector operations	lecturing, discussing, problem solving
11	Integrals of vector functions	lecturing, discussing, problem solving
12	Partial derivatives	lecturing, discussing, problem solving
13	Double integrals	lecturing, discussing, problem solving
14	Triple integrals	lecturing, discussing, problem solving
15	Integration in vector fields	
16	Final Exam	

Course Syllabus

#	Material / Resources	Information About Resources	Reference / Recommended Resources
1	George B. Thomas, Maurice D. Weir, Joel R. Hass, Thomas' Calculus, 12th Edition, ISBN-13: 978-0-321-64363-6 ISBN-10: 0-321-64363-1, 2010.		

Method of Assessment

#	Weight	Work Type	Work Title
1	40%	Mid-Term Exam	Mid-Term Exam
2	60%	Final Exam	Final Exam

Relationship between Learning Outcomes of Course and Program Outcomes

#	Learning Outcomes	Program Outcomes	Method of Assessment
1	To be able make derivatives coming in mathematical and engineering problems	1,7	1,2
2	To be able make integrals coming in mathematical and engineering problems	1,7	1,2
3	To be able to apply mathematical knowledge and experience to real problems	1,7	1,2
4	To be able to plan time management	1,7	1,2
5	To be able to do his/her job for the interests of the society and himself/herself	1,7	1,2

PS. The numbers, which are shown in the column Method of Assessment, presents the methods shown in the previous table, titled as Method of Assessment.

Work Load Details

#	Type of Work	Quantity	Time (Hour)	Work Load
1	Course Duration	14	4	56
2	Course Duration Except Class (Preliminary Study, Enhancement)	14	4	56
3	Presentation and Seminar Preparation	0	0	0
4	Web Research, Library and Archival Work	0	0	0

5	Document/Information Listing	0	0	0
6	Workshop	0	0	0
7	Preparation for Midterm Exam	0	0	0
8	Midterm Exam	1	3	3
9	Quiz	0	0	0
10	Homework	4	8	32
11	Midterm Project	0	0	0
12	Midterm Exercise	0	0	0
13	Final Project	0	0	0
14	Final Exercise	0	0	0
15	Preparation for Final Exam	0	0	0
16	Final Exam	1	3	3
				150