

# TOROS ÜNİVERSİTESİ

Faculty Of Engineering  
Electrical And Electronics Engineering (English)

## Course Information

CALCULUS II					
Code	Semester	Theoretical	Practice	National Credit	ECTS Credit
		Hour / Week			
MAT102	Spring	4	2	5	6

<b>Prerequisites and co-requisites</b>	Calculus I
<b>Language of instruction</b>	English
<b>Type</b>	Required
<b>Level of Course</b>	Bachelor's
<b>Lecturer</b>	Asst. Prof. Ali Kemal HAVARE
<b>Mode of Delivery</b>	Face to Face
<b>Suggested Subject</b>	
<b>Professional practise ( internship )</b>	Available
<b>Objectives of the Course</b>	The aim of this course is to help students learn, understand, explain, and use calculus, and to prepare them for further study in engineering.
<b>Contents of the Course</b>	Transcendental functions, L'Hopital's rule, Integral solving techniques, Simple first ODEs, Power series, Taylor and Maclaurin Series, Numerical integration, Polar coordinates, Vector operations, Partial derivatives, Multiple integrals.

## Learning Outcomes of Course

#	Learning Outcomes
1	Define functions,
2	Use limits rule to calculate some integrals forms,
3	Solve improper and proper integrals,
4	Solve simple first order differential equations,
5	Do algebra and calculus using polar coordinates,

## Course Syllabus

#	Subjects	Teaching Methods and Technics
1	Transcendental functions: Inverse functions, natural logarithm, exponential functions	lecture
2	Transcendental functions: L'Hopital rule, hyperbolic functions	lecture
3	Integral techniques: Partial integrals, trigonometric integrals, integrals of rational functions	lecture
4	Numerical integral calculation	lecture
5	First order differential equations and their applications	lecture
6	Arrays and series: Power series	lecture
7	Arrays and series: Taylor and Maclaurin series	lecture
8	Midterm	
9	Polar coordinates, drawing in polar coordinates	lecture
10	Vector operations	lecture
11	Integrals of vector functions	lecture

12	Partial derivatives	lecture
13	Double integrator	lecture
14	Triple integrals	lecture
15	Integral account in vector fields	lecture
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	Define functions,	14	1,2
2	Use limits rule to calculate some integrals forms,	1	1,2
3	Solve improper and proper integrals,	1	1,2
4	Solve simple first order differential equations,	1	1,2
5	Do algebra and calculus using polar coordinates,	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	6	84
2	Course Duration Except Class (Preliminary Study, Enhancement)	14	2	28
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	1	1
9	Quiz	0	0	0
10	Homework	4	5	20
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
				<b>136</b>