TOROS ÜNİVERSİTESİ

Faculty Of Engıneerıng
Electrıcal And Electronıcs Engıneerıng (Englısh)

Course Information

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

Prerequisites and co-requisites	Calculus I
Language of instruction	English
Type	Required
Level of Course	Bachelor's
Lecturer	Asst. Prof. Ali Kemal HAVARE
Mode of Delivery	Face to Face
Suggested Subject	
Professional practise (internship)	Available
Objectives of the Course	The aim of this course is to help students learn, understand, explain, and use calculus, and to prepare them for further study in engineering.
Contents of the Course	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 derivaties, Multiple integrals.

Learning Outcomes of Course

#	Learning Outcomes
1	Define algebraic and transcendental functions,
2	Use L'Hopital's rule to calculate limits of indeterminate forms,
3	Solve improper and proper integrals,
4	Solve simple first order differential equations,
5	Do algebra and calculus with power series,
6	Identify and use Taylor and Maclaurin Series,
7	Solve integrals numerically,
8	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 algebraic and transcendental functions,	1	1,2
2	Use L'Hopital's rule to calculate limits of indeterminate 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 with power series,	1	1,2
6	Identify and use Taylor and Maclaurin Series,	1	1,2
7	Solve integrals numerically,	1	1,2
8	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	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