



MARMARA UNIVERSITY - FACULTY OF ENGINEERING

2017-2018 Fall

MATH 1001 Calculus II

COURSE DESCRIPTION FORM

Offering Department		Department of Computer Engineering		Undergraduate must course					
Course Code		MATH1002							
Course Name		Calculus II							
Language of Instruction		English							
ECTS		6							
Contact Hours		Theoretical (T): 4		Practice (U): 0		Laboratory(L): 0			
Pre-requisites									
Instructor		Name		Assoc. Dr. Mustafa Şengül					
		E-mail		taylansengul@gmail.com					
Course Materials		Mandatory		Thomas' Calculus 12th Edition George B. Thomas, Maurice D. Weir and Joel R. Hass					
		Recommended							
Course Objectives		Gain the necessary skills for mathematical analysis and concepts in engineering.							
Course Content		Infinite series, conic section, parameterized curves and polar coordinates, vectors in space and analytic geometry, vector-valued functions and motion in space, multivariate functions and partial derivatives, multiple integrals, integration in vector fields							
Learning Outcomes		LO1		Make the analysis of convergence with defining the infinite series and sequences.					
		LO2		Determine Taylor series for a given function.					
		LO3		Apply analytical geometry with vectors in two and three dimensional space.					
		LO4		Perform partial derivatives and normal derivatives of multivariate functions.					
		LO5		Solve multiple integrals, and area and volume problems.					
Program Outcomes				LO1	LO2	LO3	LO4	LO5	LO6
PO1		Sufficient knowledge of mathematics, science (a) and computer engineering (b) (1); ability to use theoretical and practical knowledge in these areas in complex engineering problems (2).		1a	1a	1a			
PO12		Information on advanced mathematics, including differential equations, integral calculus (a), linear algebra (b), statistics and probability (c), and discrete mathematics (d).						a	a
Subjects (Knowledge, Skills and Behaviours), Contributions of Subjects to Learning Outcomes, Assessment Methods	No	Week	Subjects						
	K1	1-3	Sequences and infinite series, convergence tests, Absolute convergence, Taylor and Maclaurin series						
	K2	4-5	Parametric curves, polar coordinates, conic sections						
	K3	6-7	3D coordinate systems, vectors, lines and planes, analytic geometry						
	K4	8-10	Multivariate functions and partial derivatives, directional derivatives						
	K5	11-14	Multiple integrals, area and volume calculations						
	K6								
	K7								
	K8								
	K9								
Assessment Methods and Weights	No	Type	Weight	Implementation Rule		Make-up Rule			
	MF	Midterm-Final	100%	There will be two midterms and a final exam. Exams will be closed books and notes. Calculators are not allowed.		The students who fail to take the midterm exam due to one of the excuses listed in the Marmara University Excuse Examination Directive inform the department secretary within five days following the exam. Those who are accepted by the board of directors in accordance with the principles determined by the Senate, use the right of examination in the make-up exam period specified in the academic calendar. The make-up exam for the final exam is given in the make-up exam week.			
	Q	Quiz	-						
	H	Homeworks	-						

	P	Projects	-	-		
	R	Reports				
	S	Presentation				
	P	Participation / Interaction				
	L	Class/ Laboratory/ Field Work				
	O	Others				
	TOTAL		100%			
Determining Letter Grades	<ul style="list-style-type: none"> The letter grades will be determined based on two midterm exams and a final exam. In order to determine the letter grade, a curve or catalog based method will be followed based on the total average scores of the students. In order to pass the course, the final score and the total average score of the student must be at least 35. According to Marmara University Undergraduate regulations, the weight of the final exam must be at least 40 out of 100. 					
	Assessment	Midterm 1	Midterm 2	Final	TOTAL	
	Weight	30	30	40	100	
Teaching Method, Student Work Load	Time Applied by the Instructor					
	No	Method	Explanation			Hours
	1	Lectures	Lectures are given in class using the board or via presentations. Example questions are solved to enhance the concepts.			14x3=42
	2	Problem Session/ Practice	Problems related to the course topics are solved on the board.			
	3	Laboratory	Experiments are done in the laboratory or theoretical concepts covered during the lectures are practiced using computer exercises.			
	4	Interactive Courses	Questions are asked to students during lectures and they are encouraged to guess the answers (peer learning is also in this category)			
	5	Field Work	Students attend activities outside the campus.			
	6	Midterm	Midterm exam is given during the midterm week.			2
	7	Final	Final exam is given during the final exam week.			2
	Estimated Time to be Allocated by a Student					
	8	Projects	The students carry out research about the problem given in the project, design and implement their solution and prepare a report.			
	9	Homeworks	The students solve the problems given as homework.			
	10	Pre-class learning of Course Material	The students study and learn the new subjects from course materials.			
11	Review of Course Material	Students review the course subjects from course materials to prepare for the exams and homeworks.			100	
12	Office Hour	Students ask questions to the instructor or the assistant during office hours.			2	
TOTAL					148	
Academic Honesty	Violations of scholastic honesty include, but are not limited to cheating, plagiarizing, fabricating information or citations, facilitating acts of dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students.					
	In case academic dishonesty is observed, the first authority is the instructor of the course. The instructor may decide to give the student zero for the homework(s)/lab(s)/exam(s), give the letter grade FF, or may take disciplinary action.					