MAT 202 ADVANCED MATHEMATICS II		CIVIL ENGINEERING	
Semester	**Credit Structure**		
	Lecture	**Recitation**	**Laboratory**
4	2	2	-
Language	Turkish		
Compulsory / Elective	Compulsory		
Prerequisites	MAT 201		
Catalog Description	Fourier series. System of differential equations: Eigen value method, Laplace and operator methods. Numerical solutions of ordinary differential equations. Initial value problem, single step and multi-step methods. Partial differential equations. Boundary value problems.		
Course Objectives	Provision of the necessary mathematical knowledge in the formation of engineering background and mathematical principles required in engineering.		
Course Outcomes	Ability to apply mathematical knowledge in engineering		
Textbook and /or References	TANER Tuğrul, "Calculus I" DEMİR H., SÜER B., "Calculus" Prof.Dr.Saffet SÜRAY, "Genel Matematik" AYRES F., "Calculus" Prof.Dr.Alptekin ESİN-Esen AĞLI, "Genel Matematik"		
Assessment Criteria		**Quantity**	**Percentage**
	Midterm Exams	2	50
	Quizzes		
	Homeworks		
	Projects		
	Term Paper		
	Laboratory Work		
	Other		
	Final Exam	1	50
Course Category by Content (%)	**Mathematics and Basic Sciences**	%45	
	Engineering Science	%25	
	Engineering Design	%25	
	Social Sciences	%5	
Instructors	Prof. Güven ÜNAL		

COURSE PLAN	
Week	**Topics**
1	Fourier Series
2	Fourier Series
3	Fourier Series
4	Differential Equation Systems
5	Laplace System
6	Sample problems from Mechanics and Chemical Kinematics
7	Numerical Solutions of Ordinary Differential Equations
8	Initial Value Problem
9	Initial Value Problem
10	Differential Equations with Partial Derivatives
11	Differential Equations with Partial Derivatives
12	Differential Equations with Partial Derivatives
13	Boundary Value Problem
14	Boundary Value Problem

RELATIONSHIP BETWEEN THE COURSE AND DEPARTMENT CURRICULUM				
	Program Outcomes	**1**	**2**	**3**
1	An ability to apply knowledge of mathematics, science, and engineering			X
2	An ability to design and conduct experiments, as well as to analyze and interpret data		X	
3	An ability to design a system, component, or process to meet desired needs		X	
4	An ability to function on multi-disciplinary teams			X
5	An ability to identify, formulate, and solve engineering problems			X
6	An understanding of professional and ethical responsibility		X	
7	An ability for effective written and oral communication in Turkish and English		X	
8	The broad education necessary to understand the impact of engineering solutions in a global and societal context			X
9	A recognition of the need for, and ability to engage in life-long learning			X
10	A knowledge of contemporary issues			X
11	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice		X	
Contribution of the course : 1:None 2:Partially 3:Completely				