

COURSE DESCRIPTION FORM	
Course Code and Name	MAT 201 Differential Equations
Course Semester	3
Catalog Data of the Course (Course Content)	Some basic skills such as first and high order differential equations, solutions and applications with Laplace and inverse Laplace transformation and applications.
Textbook of the Course	Adil Mısıır, Teori Teknik ve Uygulamalı Diferensiyel Denklemler, Gazi Kitabevi, 2016.
Supplementary Textbooks	Ogün Doğru, Diferensiyel Denklemlerin Temelleri (Çeviri Kitap), Nobel Yayıncılık, 2013. Tahsin Engin, Cevdet Cerit, Fatma Ayaz, Mühendislik ve Temel Bilimler için Diferensiyel Denklemler, İzmir Güven Kitabevi, 2013.
Credit (ECTS)	5
Prerequisites of the Course	There is no prerequisite or co-requisite for this course.
Type of the Course	Compulsory
Instruction Language of the Course	Turkish
Course Objectives	To be able to study first and high order differential equations, solutions and applications with Laplace and inverse Laplace transformation and applications.
Learning Outcomes	1. Learn the definition of differential equation 2. Learn the solution methods of differential equations 3. Learn the application of differential equations 4. Learn Laplace and inverse Laplace transformation and applications
Instruction Method	The type of this course is face to face.
Weekly Schedule of the Course	1. Week: Fundamental of differential equations and classification of equations. Geometrical meanings of differential equations. 2. Week First order separable and homogeneous equations and their solution procedures: 3. Week: Linear differential equations, Bernouilli and Riccati differential equations 4. Week: Exact differential equations, integrating factors. 5. Week: Some applications of first order differential equations 6. Week: First order nonlinear differential equations 7. Week: Lagrange and Clairaut differential equations 8. Week: Theory of higher order of differential equations, Higher order homogenous differential equations with constant coefficients 9. Week: Higher order nonhomogenous differential equations with constant coefficients, Method of undetermined coefficients 10. Week: The method of variation of parameters. 11. Week: Laplace transformations and their properties 12. Week: Inverse Laplace transformations and their properties 13. Week: Applications of Laplace and inverse Laplace transformations 14. Week: Applications of Laplace and inverse Laplace transformations 15. Week: Final Exam
<b>Assesment Tasks</b> <i>(The time spent for the activities listed here will determine the amount of credit required.)</i>	Weekly theoretical course hours 4 Hours per week 0 Reading Activities 0 Internet browsing, library work 8 Designing and implementing materials 0 Report preparing 0 Preparing a Presentation 0 Presentations 0 Preparation of Midterm and Midterm Exam 22 Final Exam and Preparation for Final Exam 31

Assesment Criteria		Sayısı	Toplam Katkısı (%)						
	Midterm Exams	1	40						
	Assignment	0	0						
	Practice	0	0						
	Projects	0	0						
	Practise	0	0						
	Quizes	0	0						
	Percent of In-term Studies to Year- to Year (%)	0	40						
	Percentage of Final Exam to Total Score (%)	1	60						
Attendance									
Workload of the Course	Efficiency		Total Number of Weeks	Duration (weekly hour)					Total Period Work Load
	Weekly Theoretical Course Hours		14	4					56
	Hours Per Week		0	0					0
	Reading Tasks		0	0					0
	Internet Browsing, Library Work		2	8					16
	Designing and Implementing Materials		0	0					0
	Report Preparing		0	0					0
	Preparing a Presentation		0	0					0
	Presentations		0	0					0
	Midterm Exam and Preperation for Midterm Exam		1	22					22
	Final Exam and Preperation for Final Exam		1	31					31
	Other		0	0					0
	Total Workload								125
	Total Workload / 25								5
	Course Credit (ECTS)								5
Contribution Level Between Course Outcomes and Program Outcomes	No	Program Learning Outcomes	1	2	3	4	5		
	1	PLO1				x			
	2	PLO2				x			
	3	PLO3			x				
	4	PLO4		x					
	5	PLO5				x			
	6	PLO6			x				
	7	PLO7			x				
	8	PLO8				x			
	9	PLO9			x				
	10	PLO10			x				
Names of Lecturers and e-mails of Lecturers	Mathematics Department Teaching Members E-mail address: fefmatematik@gazi.edu.tr Phone: 2021051								

No	Program Learning Outcomes
1	To train individuals who are contemporary, entrepreneur and have unique and aesthetic values, self- confidence and capable of independent decision-making.
2	To enable the student to gain the ability of relating mathematics with the other sciences..
3	To teach mathematical thinking methods in order to improve the ability to express mathematics both orally and in writing.
4	To train individuals who are knowledgeable about the history of mathematics and the production of scientific knowledge and can follow developments in these disciplines.
5	To provide necessary equipments to take positions such areas as banking, finance, econometrics, and actuarial.
6	To acquire ability to solve problems encountered in real life by means of mathematical modeling using mathematical methods.
7	To provide ability to do necessary resource researches in the areas of mathematics and to use accessed information.
8	To give appropriate training in such areas as in computer programming and creating algorithms in order to take parts in developing IT sector.
9	To gain substructure to be able to study at graduate level.
10	To enable the student to gain the ability of relating mathematics with the other sciences.