CALCULUS III (DIFFERENTIAL EQUATIONS)

1	Course Title:	CALCULUS III (DIFFERENTIAL EQUATIONS)	
2	Course Code:	MAT2083	
3	Type of Course:	Compulsory	
4	Level of Course:	First Cycle	
5	Year of Study:	2	
6	Semester:	4	
7	ECTS Credits Allocated:	6.00	
8	Theoretical (hour/week):	3.00	
9	Practice (hour/week):	2.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	-	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Dr. Ögr. Üyesi SETENAY DOĞAN	
15	Course Lecturers:	Dr. Öğretim Üyesi Setenay DOĞAN	
16	Contact information of the Course Coordinator:	e-posta:setenay@uludag.edu.tr Telefon:0224 2941768 Adres:Bursa Uludağ Üniversitesi Fen-Edb. Fak. Mat. Böl. B102 Görükle Bursa	
17	Website:		
18	Objective of the Course:	Mathematics, physics and engineering problems to teach the types of analytic solutions of differential equations is used to obtain	
19	Contribution of the Course to Professional Development:	Learn how to apply Dfferential Equations to Engineeringproblems in their professional life and work and how to reach a solution.	
20	Learning Outcomes:		
		1	Knows to solve differential equations
		2	Learn basic mathematical formulas, and use the best
		3	Learns the analytical solution
		4	Knows to apply differential equations to mathematics and physics
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21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Definition and properties of differential equations. Types of first order equations and solutions	
2	The initial and boundary value problems, existence and uniqueness theorem for differential equations	
3	First order differential equations	

4	Separable, linear Bernoulli, Riccati equations	
5	May become homogeneous equations, the variable substitution method and its applications	
6	Nonlineer differential equations	
7	applications of nonlineer differential equations	
8	n th order differential equations. Fixed or variable-coefficienthomogeneous equations and solution methods.	
9	Non-homogeneous solution of the equation. method of undetermined coefficiens.	
10	applications of higher order , 1 st order differential equations	
11	Variation of parameters and the Cauchy-Euler differential equation	
12	System of differential equations and their solutions	
13	Laplace transform and the Laplace transform solution of differential equations.	
14	Physics and engineering applications of differential equations	

22	Textbooks, References and/or Other Materials:	Adi Diferensiyel Denklemler Mehmet Çağlıyan Nisa Çelik Setenay Doğan
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	40.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	60.00
Total	2	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		one mid exam, one Finallay exam

24	**ECTS / WORK LOAD TABLE**

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	14	5.00	70.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	10.00	10.00
Others	0	0.00	0.00
Final Exams	1	20.00	20.00
Total Work Load			180.00
Total work load/ 30 hr			6.00
ECTS Credit of the Course			6.00

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	**PQ2**	**PQ3**	**PQ4**	**PQ5**	**PQ6**	**PQ7**	**PQ8**	**PQ9**	**PQ10**	**PQ11**	**PQ12**	**PQ13**	**PQ14**	**PQ15**	**PQ16**
ÖK1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	3	4
ÖK2	0	5	0	0	0	3	0	0	4	0	0	3	0	0	0	0
ÖK3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**