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:	Prof.Dr.Mehmet Çağlıyan, Yrd.Doç.Dr.Nisa Çelik, Yrd.Doç.Dr.Emrullah Yalçın, Yrd.Doç.Dr.Sezai Hızlıyel
16	Contact information of the Course Coordinator:	setenay@uludag.edu.tr 0224 2941763 U.Ü. Fen Edebiyat Fakültesi Matematik Bölümü Nilüfer 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:	
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	The first Midterm exam and general review	
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	The second midterm and general review	
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

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			2	10.00	20.00
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

Midterm Exam	2	50.00
Homework-project	0	0.00
Total	3	100.00
Success Grade		
Total		100
Course		

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	0	0
ÖK2	0	5	0	0	0	0	0	0	0	0	0	0	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