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:	3
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:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Doç. Dr. EMRULLAH YAŞAR
15	Course Lecturers:	Doç. Dr. Sezayi HIZLIYEL Yrd.Doç.Dr. Setenay DOĞAN Yrd.Doç.Dr. Nisa ÇELİK Yrd.Doç.Dr. Emrullah YAŞAR
16	Contact information of the Course Coordinator:	caglayan@uludag.edu.tr, 0-224-2941752 Uludağ Ünv. Fen Ed. Fakültesi Matematik Bölümü Görükle Yerleşkesi 16059 Nilüfer/Bursa
17	Website:	
18	Objective of the Course:	To introduce differential equations which are appear in a lot of aplications of engineering and investigate to solutions of this..
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	
	1	Understands the importance of differential equations in terms of engineering
	2	Uses the definitions and methods of solution of differential equations
	3	Solves the first order differential equations.
	4	Solves the second and higher order differential equations.
	5	Solves differential equations with boundary conditions.
	6	Solves differential equations using Laplace transform
	7	
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21	Course Content:	

Course Content:

Week	Theoretical	Practice
1	General concepts and classification, First order equations	Problem solving
2	seperable equations, exact equations	Problem solving

3	İntegral factor, first order linear equations, variable substition (Homogenous equations, Bernoulli equations, Ricatti Equations)	Problem solving
4	Existence and uniqueness theorems, the first order differential equations with applications	Problem solving
5	High degree of first-order equations	Problem solving
6	n.-order linear differential equations: the constant coefficient differential equations (method of undetermined coefficients), variable-coefficient differential equations (separation of the operator factorization, method of variation of parameters	Problem solving
7	reduction of order	Problem solving
8	Cauchy Euler Equations	Problem solving
9	Repeating courses and midterm exam	Problem solving
10	Laplace transforms	Problem solving
11	Definitons and theorems	Problem solving
12	Solution of initial value problem	Problem solving
13	Power series method, solution around the ordinary and singular point	Problem solving
14	Linear differential equations and systems: basic theory and solutions, using the Laplace transform solution	Problem solving

22	Textbooks, References and/or Other	Prof.Dr. Mehmet CAĞLIYAN, Yrd.Doc.Dr. Nisa CELİK,

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	4.00	56.00
Homeworks	1	30.00	30.00
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	12.00	12.00
Total Work Load			178.00
ECTS Credit of the Course			6.00

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Quiz	0	0.00
Final Exam	1	50.00
Contribution of Term (Year) Learning Activities to		50.00
Contribution of Final Exam to Success Grade		50.00
Total work load/ 30 hr		5.93
Measurement and Evaluation Techniques Used in the		

24 ECTS / WORK LOAD TABLE

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	4	5	3	2	0	0	0	0	0	2	0	0	0	3	0	0
ÖK2	4	5	0	0	0	0	0	0	0	0	0	0	0	3	0	0
ÖK3	4	5	3	0	0	0	0	0	0	0	0	0	0	3	0	0
ÖK4	4	5	3	0	0	0	0	0	0	0	0	0	0	3	0	0

ÖK5	4	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK6	4	5	3	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**