



COURSE: APPLIED DIFFERENTIAL CALCULUS

DEGREE: INFORMATICS ENGINEERING

YEAR: SECOND

TERM: FIRST

WEEKLY PLANNING									
WEEK	SESSION	DESCRIPTION	GROUPS		SPECIAL ROOM FOR SESSION (Computer classroom, audio-visual classroom)	Indicate YES/NO If the session needs 2 teachers : Maximum 4 sessions	WEEKLY PROGRAMMING FOR STUDENT		
			LECTURE	SEMINAR			DESCRIPTION	CLASS HOURS	HOMEWORK HOURS Maximum 7 H
1	1	Overview of the course. First Order Differential Equations (I)	x			NO	Study of Linear Equations.	1.66	6
1	2	Problems session 1.		x		NO	Problems and exercises corresponding to session #1.	1.66	
2	3	First order differential equations (II)	x			NO	Study of separable, exact and homogeneous equations.	1.66	6
2	4	Problems session 3.		x		NO	Problems and exercises corresponding to session #3.	1.66	
3	5	First Order Differential Equations (III)	x			NO	Study of Qualitative Techniques: Slope Fields. Equilibrium and Phase line. Bifurcations.	1.66	6
3	6	Problems session 5.		x		NO	Problems and exercises corresponding to session #5.	1.66	

4	7	Second Order Differential Equations (I)	x			NO	Study of: - Nonlinear and Linear Equations. - Homogeneous Linear Equations.	1.66	6
4	8	Problems session 7		x		NO	Problems and exercises corresponding to session #7	1.66	
5	9	Second Order Differential Equations (II)	X			NO	Study of Nonhomogeneous Linear Equations.	1.66	6
5	10	Problems session 9		x		NO	Problems and exercises corresponding to session #9.	1.66	
6	11	Second Order Differential Equations (III)	X			NO	Study of: - Reduction of Order. - Euler-Cauchy Equations.	1.66	6
6	12	Problems session 11		x		NO	Problems and exercises corresponding to session #11	1.66	
7	13	Laplace transformations (I)	X			NO	Study of Laplace transformations	1.66	6
7	14	Problems session 13		x		NO	Problems and exercises corresponding to session #13	1.66	
8	15	Laplace transformations (II)	x			NO	Applications of Laplace transformations to ordinary differential equations	1.66	6
8	16	Problems session 15		x		NO	Problems and exercises corresponding to session #15	1.66	
9	17	Systems of differential equations (I)	x			NO	Study of Linear and Non-Linear Systems. Study of Vector representation and applications.	1.66	6
9	18	Problems session 17		x		NO	Problems and exercises corresponding to session #17	1.66	
10	19	Systems of differential equations (II)	x			NO	Applications of eigenvalues and linearization.	1.66	6
10	20	Problems session 19		x		NO	Problems and exercises corresponding to session #19	1.66	
11	21	Exam.	X			NO	Exam of sessions 1 to 20.	1.66	6
11	22	Fourier series and separation of variables (I)	X				Study of properties of Fourier series. Applications of Fourier series to Partial Differential Equations.	1.66	

11	23	Problems session 22		X		NO	Problems and exercises corresponding to session #22	1.66	
12	24	Fourier series and separation of variables (II)	X			NO	Solving Partial Differential Equations with separation of variables.	1.66	
12	25	Problems session 24				NO	Problems and exercises corresponding to session #24	1.66	6
13	26	Numerical methods (I)		x		NO	Study of Euler and Runge-Kutta methods	1.66	
14	27	Problems session 26		x		NO	Problems and exercises corresponding to session #26	1.66	6
14	28	Numerical methods (II)	X			NO	Solving boundary value problems with numerical methods.	1.66	6
14	29	Problems session 28		x		NO	Problems and exercises corresponding to session #28	1.66	
Total 1 (Hours of class plus student homework hours between weeks 1-14)								48,33	+ 84
15		Tutorials, handing in, etc							
16		Assessment							
17									
18									
Total 2 (Hours of class plus student homework hours between weeks 15-18)								3	14.67
Total 2 (Hours of class plus student homework hours between weeks 15-18)								150	

TOTAL (Total 1 +Total 2. Maximum 180 hours

150

