Universidad Carlos III de Madrid
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COURSE: DIFFERENTIAL EQUATIONS		
DEGREE: Energy Egineering	**YEAR: 2016-17**	**TERM: FIRST**

WEEKLY PLANNING

WEEK	SESSION	DESCRIPTION	GROUPS (mark X)		SPECIAL ROOM FOR SESSION (Computer class room, audio-visual class room)	Indicate YES/NO If the session needs 2 teachers	WEEKLY PROGRAMMING FOR STUDENT		
			LECTURES	SEMINARS			DESCRIPTION	CLASS HOURS	HOMEWORK HOURS (Max. 7h week)
1	1	CHAPTER 1: FIRST ORDER DIFFERENTIAL EQUATIONS. DEFINITION AND EXAMPLES. ELEMENTARY RESOLUTION METHODS: SEPARATION OF VARIABLES, HOMOGENEOUS EQUATIONS, EXACT EQUATIONS.	X			NO	STUDY OF SUBJECT'S THEORY.	1,6	6,5
1	2	EXERCISES AND DISCUSSION.		X		NO	EXERCISES OF ASSIGNMENT 1.1.	1,6	
2	3	ELEMENTARY RESOLUTION METHODS (CONTINUED): INTEGRATING FACTORS, LINEAR EQUATIONS, BERNOULLI EQUATIONS.	X			NO	STUDY OF SUBJECT'S THEORY.	1,6	6,5
2	4	EXERCISES AND DISCUSSION.		X		NO	EXERCISES OF ASSIGNMENT 1.2.	1,6	

3	5	APPLICATIONS.	X			NO	STUDY OF SUBJECT'S THEORY.	1,6	6,5
3	6	EXERCISES AND DISCUSSION.		X		NO	EXERCISES OF ASSIGNMENT 1.3.	1,6	
4	7	CHAPTER 2: HIGHER ORDER EQUATIONS. LINEAR EQUATIONS OF ORDER N WITH CONSTANT COEFFICIENTS.	X			NO	STUDY OF SUBJECT'S THEORY.	1,6	6,5
4	8	EXERCISES AND DISCUSSION.		X		NO	EXERCISES OF ASSIGNMENT 2.1.	1,6	
5	9	EQUATIONS WITH VARIABLE COEFFICIENTS. ORDER REDUCTION AND EQUIDIMENSIONAL EQUATIONS. RELATION WITH LINEAR SYSTEMS.	X			NO	STUDY OF SUBJECT'S THEORY.	1,6	6,5
5	10	EXERCISES AND DISCUSSION.		X		NO	EXERCISES OF ASSIGNMENT 2.2.	1,6	
6	11	CHAPTER 3: LAPLACE TRANSFORM. DEFINITION AND PROPERTIES. TRANSFORMING AND BACKTRANSFORMING.	X			NO	STUDY OF SUBJECT'S THEORY.	1,6	6,5
6	12	EXERCISES AND DISCUSSION.		X		NO	EXERCISES OF ASSIGNMENT 3.1.	1,6	
7	13	APPLICATION TO SOLVING LINEAR EQUATIONS AND SYSTEMS.	X			NO	STUDY OF SUBJECT'S THEORY.	1,6	6,5
7	14	EXERCISES AND DISCUSSION.		X		NO	EXERCISES OF ASSIGNMENT 3.2.	1,6	
8	15	CONTROL EVALUATION 1	X			NO	CONTROL EXAM.	1,6	6,5
8	16	EXERCISES AND DISCUSSION.		X		NO	EXERCISES OF ASSIGNMENT 3.2.	1,6	

9	17	CHAPTER 4: METHOD OF SEPARATION OF VARIABLES. INTRODUCTION TO PARTIAL DIFFERENTIAL EQUATIONS. EXAMPLES OF PDES FROM MATHEMATICAL PHYSICS. DIFFERENT KINDS OF EQUATIONS AND DATA.	X			NO	STUDY OF SUBJECT'S THEORY.	1,6	6,5
9	18	EXERCISES AND DISCUSSION.		X		NO	EXERCISES OF ASSIGNMENT 4.1.	1,6	
10	19	RESOLUTION OF PDES BY SEPARATION OF VARIABLES	X			NO	STUDY OF SUBJECT'S THEORY.	1,6	6,5
10	20	EXERCISES AND DISCUSSION.		X		NO	EXERCISES OF ASSIGNMENT 4.1.	1,6	
11	21	ODD, EVEN, AND PERIODIC EXTENSIONS OF A FUNCTION. TRIGONOMETRIC FOURIER SERIES. ORTHOGONALITY. COVNERGENCE. DERIVATION AND INTEGRATION. COMPLEX FORM OF A FOURIER SERIES.	X			NO	STUDY OF SUBJECT'S THEORY.	1,6	6,5
11	22	EXERCISES AND DISCUSSION.		X		NO	EXERCISES OF ASSIGNMENT 4.2.	1,6	
12	23	CHAPTER 5: STURM-LIOUVILLE PROBLEMS. DEFINITION AND PROPERTIES.	X			NO	STUDY OF SUBJECT'S THEORY.	1,6	6,5
12	24	EXERCISES AND DISCUSSION.		X		NO	EXERCISES OF ASSIGNMENT 5.1. AND FREDHOLM-NONHOMOGENEOUS PDEs	1,6	
13	25	RESOLUTION OF STURM-LIOUVILLE PROBLEMS.	X			NO	STUDY OF SUBJECT'S THEORY.	1,6	6,5
13	26	EXERCISES AND DISCUSSION.		X		NO	EXERCISES OF ASSIGNMENT 5.2. AND FREDHOLM-NONHOMOGENEOUS PDEs	1,6	
14	27	RESOLUTION OF STURM-LIOUVILLE PROBLEMS. (CONTINUED)	X			NO	STUDY OF SUBJECT'S THEORY.	1,6	6,5
14	28	EXERCISES AND DISCUSSION.		X		NO	EXERCISES OF ASSIGNMENT 5.2 AND FREDHOLM-NONHOMOGENEOUS PDEs	1,6	

	29	REVIEW AND TUTORING.	X			NO		1,6	
							Subtotal 1	**48,33**	**91**
							Total 1 *(Hours of class plus student homework hours between weeks 1-14)*	139,33	

15		CONTROL EVALUATION 2. TUTORIALS, HANDING IN, ETC	X			NO		2	6
16		ASSESSMENT						3	6
17									
18									
							Subtotal 2	**5**	**12**
							Total 2 *(Hours of class plus student homework hours between weeks 15-18)*	17	

TOTAL *(Total 1 + Total 2)*	**156,33**