Universidad
Carlos III de Madrid
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COURSE: PARTIAL DIFFERENTIAL EQUATIONS		
DEGREE: APPLIED MATHEMATICS AND COMPUTING	YEAR: 3	TERM: 2

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**: Introduction to PDEs. First concepts. Fundamental equations.	X		NO	NO	Reading the notes and bibliography corresponding to these topics	1,66	6,5
1	2	Discussion and resolution of problems		X	NO	NO	Resolution of the corresponding problems of the list	1,66	
2	3	Fundamental equations. **CHAPTER 2**. Separation of variables. Fourier series.	X		NO	NO	Reading the notes and bibliography corresponding to these topics	1,66	6,5
2	4	Discussion and resolution of problems		X	NO	NO	Resolution of the corresponding problems of the list	1,66	
3	5	Convergence and regularity of Fourier series.	X		NO	NO	Reading the notes and bibliography corresponding to these topics	1,66	6,5
3	6	Discussion and resolution of problems		X	NO	NO	Resolution of the corresponding problems of the list	1,66	

4	7	Sturm-Liouville problems.	X		NO	NO	Reading the notes and bibliography corresponding to these topics	1,66	6,5
4	8	Discussion and resolution of problems		X	NO	NO	Resolution of the corresponding problems of the list	1,66	
5	9	Fourier transform	X		NO	NO	Reading the notes and bibliography corresponding to these topics	1,66	6,5
5	10	Discussion and resolution of problems		X	NO	NO	Resolution of the corresponding problems of the list	1,66	
6	11	**CHAPTER 3**. Laplace equation. Properties of harmonic functions.	X		NO	NO	Reading the notes and bibliography corresponding to these topics	1,66	6,5
6	12	Discussion and resolution of problems		X	NO	NO	Resolution of the corresponding problems of the list	1,66	
7	13	Poisson equation. Green's representation.	X		NO	NO	Reading the notes and bibliography corresponding to these topics	1,66	6,5
7	14	Discussion and resolution of problems		X	NO	NO	Resolution of the corresponding problems of the list	1,66	
8	15	Green's functions.	X		NO	NO	Reading the notes and bibliography corresponding to these topics	1,66	6,5
8	16	Discussion and resolution of problems.		X	NO	NO	Resolution of the corresponding problems of the list.	1,66	
9	17	**CHAPTER 4**. The heat equation in bounded domains. Separation of variables.	X		NO	NO	Reading the notes and bibliography corresponding to these topics	1,66	6,5
9	18	First midterm exam		X	NO	NO	First midterm exam	1,66	
10	19	Green's representation. The heat equation in the space.	X		NO	NO	Reading the notes and bibliography corresponding to these topics	1,66	6,5
10	20	Discussion and resolution of problems		X	NO	NO	Resolution of the corresponding problems of the list	1,66	
11	21	Gauss kernel. Selfsimilarity.	X		NO	NO	Reading the notes and bibliography corresponding to these topics	1,66	6,5
11	22	Discussion and resolution of problems		X	NO	NO	Resolution of the corresponding problems of the list	1,66	

12	23	**CHAPTER 5**. The wave equation in bounded domains. Separation of variables.	X		NO	NO	Reading the notes and bibliography corresponding to these topics	1,66	6,5
12	24	Discussion and resolution of problems		X	NO	NO	Resolution of the corresponding problems of the list	1,66	
13	25	The wave equation in the line. D'Alembert formula.	X		NO	NO	Reading the notes and bibliography corresponding to these topics	1,66	6,5
13	26	Discussion and resolution of problems		X	NO	NO	Resolution of the corresponding problems of the list	1,66	
14	27	The wave equation in dimension 3. Descending method.	X		NO	NO	Reading the notes and bibliography corresponding to these topics	1,66	6,5
14	28	Discussion and resolution of problems. Second midterm exam		X	NO	NO	Resolution of the corresponding problems of the list. Second midterm exam	1,66	
							Subtotal 1	46,48	91

Total 1 (Hours of class plus student homework hours between weeks 1-14	**137,48**

15		Tutorials						2	6
16		TRAINING FOR THE FINAL EXAM						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)	**154,48**