Universidad Carlos III de Madrid
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COURSE:		
DEGREE: Aerospace Engineering	**YEAR: 2015/16**	**TERM: 2st**

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	Introduction/Scope of the course Wings of finite span in incompressible flow 1/8 - Problem Statement - Basic solutions for 3D potential flow	X					1,6	6.66
1	2	Wings of finite span in incompressible flow 2/8 - Surface distributions of basic solutions - Green's formula		X				1,6	
2	3	Wings of finite span in incompressible flow 3/8 - Lifting surface theory - Symmetric problem	X					1,6	7

		- Anti-symmetric problem.							
2	4	Wings of finite span in incompressible flow 4/8 - Introduction to panel methods. - XFLR4		X	computer			1,6	
3	5	Wings of finite span in incompressible flow 5/8 - Slender wing theory	X					1,6	7
3	6	Wings of finite span in incompressible flow 6/8 - Exercises		X				1,6	
4	7	Wings of finite span in incompressible flow 7/8 - Non-potential effects on delta wings - Trefft plane	X					1,6	7
4	8	Wings of finite span in incompressible flow 8/8 - Exercises		X				1,6	
5	9	Wings of finite span in subsonic flow 1/2 - Linearization of the problem for compressible flows - Prandtl-Glauert Analogy - Review: Critical Mach number	X					1,6	7
5	10	Wings of finite span in subsonic flow 2/2 - Exercises		X	computer			1,6	
6	11	Introduction to Hypersonic flow	X					1,6	7
6	12	Introduction to Hypersonic flow		X				1,6	
7	13	Introduction to Hypersonic flow	X					1,6	7
7	14	Presentations by the students		X				1,6	
8	15	Introduction to Aeroelasticity	X					1,6	7
8	16	Hypersonic Evaluation		X				1,6	
9	17	Aeroelasticity & Dynamic Loads.	X					1,6	7
9	18	2D Aeroelasticity: fixing concepts with some analytical 2D solutions		X				1,6	
10	19	2D & 3D Static aeroelasticity: divergence and control reversal	X					1,6	7
10	20	3D Aeroelasticity: The structural model & the normal modes		X				1,6	
11	21	The experimental modal analysis and the GVT. Dynamic model validation.	X					1,6	7
11	22	3D Aeroelasticity: unsteady aerodynamics, origins (Wagner, Küssner, Theodorsen). Rodden and the Doublet		X				1,6	

		Lattice Method (DLM)							
12	23	The flutter equation and its solution	X					1,6	7
12	24	The flutter equation and its solution II		X				1,6	
13	25	Flutter speed sensitivities. Control surface massbalance. Aeroservoelasticity	X					1,6	7
13	26	Flight Flutter Test. Aeroelastic model validation. Wrap up of aeroelastic stability problems.		X				1,6	
14	27	Ground & Dynamic flight loads: Taxi	X					1,6	7
14	28	Ground & Dynamic flight loads: Gust and Turbulence		X				1,6	
14	29	Ground & Dynamic flight loads: Buffet	X					1,6	0
							Subtotal 1	**48,33**	**97.66**
							Total 1 *(Hours of class plus student homework hours between weeks 1-14)*	146	

15		Tutorials, handing in, etc						14	
16		Assessment						3	14
17									
18									
							Subtotal 2	**3**	
							Total 2 *(Hours of class plus student homework hours between weeks 15-18)*	34	

TOTAL *(Total 1 + Total 2. Maximum 180 hours)*	**180**