

ASIGNATURA: AEROSPACE STRUCTURES		
GRADO: AEROSPACE ENGINEERING	CURSO: 3	CUATRIMESTRE: 1

PLANIFICACIÓN SEMANAL DE LA ASIGNATURA								
S E M A N A	S E S I Ó N	DESCRIPCIÓN DEL CONTENIDO DE LA SESIÓN	TIPO DE DOCENCIA (marcar X)		ESPACIO DISTINTO DEL AULA (aula informática, audiovisual, etc.)	TRABAJO SEMANAL DEL ALUMNO		
			A G R E G A D O	R E U C I D O		DESCRIPCIÓN	HORAS PRESENCIALES (1,66=50+50 min)	HORAS TRABAJO (Max. Estim. 6,5h)
1	1	CHAPTER 1. Structures in the aerospace and aeronautical sector Subject 1 Structural description of the aircraft - Loads on aircraft structures - Function of structural components - Aircraft structure - Helicopter structure	x		NO	Previous reading of proposed themes Personal work about lesson	1,66	6,5
	2	Exercises related with Subject 1		x	NO	Personal work about Subject 1 Proposed exercises. Discussion	1,66	
2	3	Subject 2. Structures in the aeronautical sector (I) - Definition of frame structure - Non-translational structure - Stresses in frame structures	x		NO	Previous reading of proposed themes Personal work about lesson	1,66	6,5
	4	Exercises related with Subject 2		x	NO	Personal work about Subject 2 Proposed exercises. Discussion	1,66	

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			A G R E G A D O	R E D U C I D O		DESCRIPCIÓN	HORAS PRESENCIALES (1,66=50+50 min)	HORAS TRABAJO (Max. Estim. 6,5h)
3	5	Subject 3. Structures in the aeronautical sector (I) - Definition of lattice structure - Stresses in truss structures	x		NO	Previous reading of proposed themes Personal work about lesson	1,66	6,5
	6	Exercises related with Subject3		x	NO	Personal work about Subject 3 Proposed exercises. Discussion	1,66	
4	7	Chapter 2. Bending, shear and torsion of thinwalled beams Subject 4 Bending and shear of open and closed, thin-walled beams(I) - Kinematic hypothesis - Shear of open section beams	x		NO	Previous reading of proposed themes Personal work about lesson	1,66	6,5
	8	Exercises related with Subject 4		x	NO	Personal work about Subject 4 Proposed exercises. Discussion	1,66	
5	9	Subject 5. Bending and shear of open and closed, thin-walled beams(II) - Shear of closed section beams - Shear centre	x		NO	Previous reading of proposed themes Personal work about lesson	1,66	6,5
	10	Exercises related with Subject 5		x	NO	Personal work about Subject 5 Proposed exercises. Discussion	1,66	

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6	11	Subject 6. Torsion on thin-walled beams - Torsion of closed section beams x NO NO Previous reading of proposed themes Personal work about lesson 1,67 7 Página 3 de 5	x		NO	Previous reading of proposed themes Personal work about lesson	1,66	6,5
	12	- Torsion of open section beams - Torsion of multiple-cell section beams Exercises related with Subject 6		x	NO	- Work in groups -Analysis of data -Report writing The class could be divided in two groups depending of the number of students	1,66	
7	13	Chapter 3. Plates and Shells Subject 7. Bending of thin plates (I) - Kinematic - Plates subjected to a distributed transverse loads	x		NO	Previous reading of proposed themes Personal work about lesson	1,66	6,5
	14	Laboratory session 1 Applying the knowledge of the theoretical concepts, the students will study the stresses and strains in elements of simple geometry using a computer program The date of the laboratory session may be changed. Any changes will be communicated via Aula Global		x	YES	Previous reading of proposed themes Personal work about lesson	1,66	

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8	15	Subject 8. Bending of thin plates (II) - Plates subjected to bending and twisting - Transversal and in-plane loading Continuous assessment test - The date of the continuous assessment test may be changed. Any changes will be communicated via Aula Global	x		NO	Previous reading of proposed themes Personal work about lesson	1,66	6,5
	16	Laboratory session 2 Applying the knowledge of the theoretical concepts, the students will study the stresses and strains in elements of simple geometry using a Finite Element software (Abaqus). The date of the laboratory session may be changed. Any changes will be communicated via Aula Global		x	YES	- Work in groups -Analysis of data -Report writing The class could be divided in two groups depending of the number of students	1,66	
9	17	Subject 9. Shells (I) - Thin shells subjected to bending and in-plane loads	x		NO	Previous reading of proposed themes Personal work about lesson	1,66	6,5
	18	Exercises related with Subject 7 and 8		x	NO	Personal work about Subject 7 and 8 Proposed exercises. Discussion	1,66	
	19	Subject 10. Shells (II) - Thin shells subjected to bending and in-plane loads	x		NO	Previous reading of proposed themes Personal work about lesson	1,66	

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10	20	Laboratory session 3 Applying the knowledge of theoretical concepts, the students will design, using a Finite Element software, a structural element to assure that the stresses and deflections are below de the maximum values. At the end of the semester students will submit, through Aula Global, a report which will include a description of the design and calculus of the structural element. The date of the laboratory session may be changed. Any changes will be communicated via Aula Global		x	YES	- Work in groups -Analysis of data -Report writing The class could be divided in two groups depending of the number of students	1,66	6,5
11	21	Chapter 4. Laminate and sandwich structures Subject 11. Theory of laminate - Kinematic - Orthotropic constitutive equations - Classical and first-order theories of laminate composites - Failure criteria	x		NO	Previous reading of proposed themes Personal work about lesson	1,66	6,5
	22	Exercises related with Subject 9 and 10		x	NO	Personal work about Subject 1 Proposed exercises. Discussion	1,66	
12	23	Subject 12. Composite beams and plates - Composite beams subjected to bending - Composite thin-walled cross-section beams - Bending of composite plates	x		NO	Previous reading of proposed themes Personal work about lesson	1,66	6,5

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	24	Exercises related with Subject 9 and 10		x	NO	Personal work about Subject 9 and 10 Proposed exercises. Discussion	1,66	
13	25	Subject 13. Sandwich structures - Basic sandwich theory - Sandwich beams -Sandwich plates	x		NO	Previous reading of proposed themes Personal work about lesson	1,66	6,5
	26	Exercises related with Subject 11		x	NO	Personal work about Subject 11 Proposed exercises. Discussion	1,66	
14	27	Exercises related with Subject 12	x		NO	Personal work about Subject 12 Proposed exercises. Discussion	1,66	6,5
	28		Exercises related with Subject 13		x	NO	Personal work about Subject 13 Proposed exercises. Discussion	
	29	Additional session	X		NO	Personal work about all Subjects Proposed exercises. Discussion	1,66	3,25

Subtotal 1 **48** **94**

Total 1 (Horas presenciales y de trabajo del alumno) **142**

15		Recuperaciones, tutorías, entrega de trabajos, etc					3,6	-
16	17 18	Preparación de evaluación y examen					4	10

Subtotal 2 **8** **10**

Total 2 (Horas presenciales y de trabajo del alumno) **18**

PLANIFICACIÓN SEMANAL DE LA ASIGNATURA

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TOTAL (<i>Máximo 160 horas</i>)						160		