



Universidad
Carlos III de Madrid
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COURSE: Aerospace Propulsion: complement I
DEGREE: BACHELOR IN AEROSPACE ENGINEERING

2017-18
YEAR: 4 TERM: 2

WEEKLY PLANNING

WEEK	SESSION	DESCRIPTION	GROUPS (mark X)		SPECIAL ROOM FOR SESSION	the session needs 2 teachers? YES/NO	WEEKLY PROGRAMMING FOR STUDENT		
			LECTURES	SEMINARS			OBSERVATIONS	CLASS HOURS	HOMEWORK HOURS (Max. 7h week)
1	1	INTROD. COMBUSTION AND FUELS	X			NO		1.7	3
2	2	THERMOCHEMISTRY I	X			NO		1.7	3
	3	The thrust equation, gravity and drag losses	X			NO		1.7	3
3	4	THERMOCHEMISTRY II		X		NO		1.7	3
	5	Equations of motion of a rocket. Launch trajectory. Rocket staging				NO		1.7	3
4	6	THERMOCHEMISTRY III	X			NO		1.7	3
	7	Lab: water rockets		X	X	NO		1.7	3
5	8	Elements of orbital mechanics and propulsive maneuvers in space		X		NO		1.7	3
	9	CHEMICAL KINETICS I		X		NO		1.7	3
6	10	Review of nozzle flows, Choked mass flow, characteristic velocity	X			NO		1.7	3
	11	QUIZ 1				NO		1.7	3
7	12	Thrust coefficient, specific impulse, Separation and real nozzle effects		X		NO		1.7	3
	13	CHEMICAL KINETICS II	X			NO		1.7	3
8	14	Review of Heat Transfer, Reynold' analogy and the Bartz' formula. Cooling		X		NO		1.7	3
	15	CHEMICAL KINETICS III	X			NO		1.7	3
9	16	Solid propellant rockets		X		NO		1.7	3
	17	SIMPLE REACTOR SYSTEMS I		X		NO		1.7	3
10	18	Solid propellant rockets II. Solid rocket design.		X		NO		1.7	3
11	19	SIMPLE REACTOR SYSTEMS II	X			NO		1.7	3

11	20	Liquid rockets	X			NO		1.7	3
12	21	Liquid rockets II. Hybrid rockets	X			NO		1.7	3
	22	SIMPLE REACTOR SYSTEMS III		X		NO		1.7	3
13	23	QUIZ 2				NO		1.7	3
	24	Lab: hybrid rocket		X	X	NO		1.7	3
14	25	MASS AND HEAT DIFFUSION I		X		NO		1.7	3
15	26	MASS AND HEAT DIFFUSION II	X			NO		1.7	3
	27	Nuclear and electric propulsion		X		NO		1.7	3
16	28	Electric propulsion II		X		NO		1.7	3
Subtotal 1								46.8	84
Total 1 (Hours of class plus student homework hours between weeks 1-16)								130.8	
		Exam preparation						0	12
		Exam preparation						0	12
		FINAL EXAM						3	
Subtotal 2								3	24
Total 2 (Hours of class plus student homework hours between weeks 16-18)								27	
TOTAL (Total 1 + Total 2. <u>Maximum 180 horas</u>)								158	



