



Universidad
Carlos III de Madrid
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COURSE: ROCKET MOTORS
DEGREE: BACHELOR IN AEROSPACE ENGINEERING

2020-21
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)
02-feb	1	Introduction. Thrust generation in a rocket	X			NO	Assigned course materials and exercises.	1.7	2
11-feb	2	Equations of motion of a rocket. Launch trajectory. Rocket staging		X		NO	Assigned course materials and exercises.	1.7	3
16-feb	3	Laboratory session: water rockets		X	X	NO	Do the preparation of lab report	0.4	3
25-feb	4	Review of nozzle flows. Nozzle types. Characteristic velocity	X	X		NO	Assigned course materials and exercises.	1.7	3
02-mar	5	Thrust coefficient. Real nozzle effects.	X			NO	Assigned course materials and exercises.	1.7	3
11-mar	6	Review of heat transfer. Reynold's analogy. Bartz' formula. Regenerative cooling. Ablative cooling	X			NO	Study for the quiz	1.7	3
16-mar	7	Quiz	X					0.8	
25-mar	8	Solid propellant rockets I		X		NO	Assigned course materials and exercises.	1.0	3
08-abr	9	Solid propellant rockets II. Solid rocket design.	X			NO	Assigned course materials and exercises.	1.7	3
13-abr	10	Liquid rockets I.		X		NO	Assigned course materials and exercises.	1.7	3
22-abr	11	Liquid rockets II. Hybrid rockets	X			NO	Assigned course materials and exercises.	1.7	3
27-abr	12	Laboratory session: hybrid rocket test		X	X	NO	Do the preparation of lab report	0.8	6
06-may	13	Nuclear propulsion and electric propulsion I	X			NO	Do the preparation of lab report	1.7	3
11-may	14	Electric propulsion II		X		NO	Do the preparation of lab report	1.7	3
Subtotal 1								19.7	41
Total 1 (Hours of class plus student homework between weeks 1-14)								60.7	
		Exam preparation						0	6
		Exam preparation						0	6
		FINAL EXAM						3	

	Subtotal 2	3	12
Total 2 (<i>Hours of class plus student homework between weeks 15-18</i>)		15	
TOTAL (<i>Total 1 + Total 2. <u>Maximum 90 horas</u></i>)		75.7	

NOTE: At the moment of the publication of this plan the University has not provided the official schedule, so it is not possible to specify which sessions are going to be synchronous (on-line).