



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

**2018-19**  
**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)
30-ene	1	Introduction. Thrust generation in a rocket	X			NO	Assigned course materials and exercises.	1.7	2
06-feb	2	Equations of motion of a rocket. Launch trajectory. Rocket staging		X		NO	Assigned course materials and exercises.	1.7	3
13-feb	3	<b>Laboratory session: water rockets</b>		X	X	NO	Do the preparation of lab report	<b>0.4</b>	<b>3</b>
20-feb	4	Review of nozzle flows. Nozzle types. Characteristic velocity	X	X		NO	Assigned course materials and exercises.	1.7	3
27-feb	5	Thrust coefficient. Real nozzle effects.	X			NO	Assigned course materials and exercises.	1.7	3
05-mar	6	Review of heat transfer. Reynold's analogy. Bartz' formula. Regenerative cooling. Ablative cooling	X			NO	Study for the quiz	1.7	3
12-mar	7	<b>Quiz</b>	X					0.8	
19-mar	8	Solid propellant rockets I		X		NO	Assigned course materials and exercises.	1.0	3
26-mar	9	Solid propellant rockets II. Solid rocket design.	X			NO	Assigned course materials and exercises.	1.7	3
02-abr	10	Liquid rockets I.		X		NO	Assigned course materials and exercises.	1.7	3
16-abr	11	Liquid rockets II. Hybrid rockets	X			NO	Assigned course materials and exercises.	1.7	3
23-abr	12	<b>Laboratory session: hybrid rocket test</b>		X	X	NO	Do the preparation of lab report	0.8	6
30-abr	13	Nuclear propulsion and electric propulsion I	X			NO	Do the preparation of lab report	1.7	3
07-may	14	Electric propulsion II		X		NO	Do the preparation of lab report	1.7	3
<b>Subtotal 1</b>								<b>19.7</b>	<b>41</b>
<b>Total 1 (Hours of class plus student homework between weeks 1-14)</b>								<b>60.7</b>	
		Exam preparation						0	6
		Exam preparation						0	6
		<b>FINAL EXAM</b>						<b>3</b>	

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