



COURSE: Vehicle Theory		
DEGREE: Mechanical Engineering	YEAR: 3º	TERM: 1º

The subject has 29 sessions that should be distributed along 14 weeks. The labs can be placed in any of them.

WEEKLY PROGRAMMING									
WEEK	SESSION	DESCRIPTION	GROUPS		Indicar espacio distinto de aula (aula informática, audiovisual, etc.)	Indicar SI/NO es una sesión con 2 profesores	WEEK WORK OF THE STUDENT		
			LECTURE	SEMINAR			DESCRIPTION	CLASS HOURS	HOMEWORK HOURS Maximum 7 H
1	1	Introduction to the subject and detailing of the evaluation criteria.		x			Introduction	1,66	5
1	2	Types of vehicles. Vehicle chassis. Calculation of centre of gravity (Introduction to the vehicle reforms	x				Review the basics of mechanics and physics.	1,66	
2	3	Exercises of vehicle reforms and calculation of centre of gravity and load distribution.		x			Solving of exercises of vehicle reforms and centre of gravity calculations, as well as load distribution.	1,66	5
2	4	Tyre general features.	x				Study the general features of tyres.	1,66	
3	5	Mechanical features of tyres and tyre exercises.		x			Study the mechanical behaviour of tires; forces and moments that take place. Solving	1,66	5

							of exercises for tyres.		
3	6	Aerodynamics.	x				Study of the basics of vehicle aerodynamics	1,66	
4	7	LAB OF CHASSIS		x		x	LAB OF CHASSIS	1,66	25
4	8	Longitudinal dynamics (Traction)	x				Study the behaviour of vehicles under traction efforts and calculation of vehicle performance.	1,66	
5	9	Exercises of longitudinal dynamics (Traction) and aerodynamics.		x			Solving of exercises for vehicle performance calculation	1,66	5
5	10	Transmission system.	x				Study the different systems that allow the transmission of power from the engine to the wheels.	1,66	
6	11	Exercises for the calculation of transmission components.		x			Solving of exercises regarding transmission components.	1,66	5
6	12	Longitudinal dynamics (Braking)	x				Study the behaviour of the vehicle under braking efforts.	1,66	
7	13	Exercises of braking.		x			Solving of exercises for the understanding of longitudinal dynamics due to braking.	1,66	5
7	14	Braking system	x				Study of the braking systems of a vehicle.	1,66	
8	15	Solving of exercises for brake system design.		x			Solving of exercises to design brake system.	1,66	5
8	16	Lateral dynamics (Cornering)	x				Study of the lateral dynamics (cornering).	1,66	
9	17	Exercises of cornering.		x			Solving of exercises of cornering.	1,66	5
9	18	Mid-Term Test	x				Mid-Term Test	1,66	
10	19	Solving Mid-Term Test		x			Solving Mid-Term Test	1,66	5
10	20	Suspension system and vertical dynamics	x				Study of the vertical dynamics and suspension system design	1,66	
11	21	Exercises of suspension system		x			Solving of exercises of suspension	1,66	5
11	22	Lateral stability-rollover	x				Lateral stability-rollover	1,66	
12	23	Rollover exercises		x			Rollover exercises	1,66	5
12	24	Combined vehicle dynamics	x				Combined vehicle dynamics	1,66	

13	25	LAB OF CHASSIS		x		x	LAB OF CHASSIS	1,66	10
13	26	Hybrid Vehicles	x				Hybrid Vehicles	1,66	
14	27	LAB		x			LAB	1,66	5
14	28	LAB		x			LAB	1,66	
	29	LAB		x			LAB	1,66	7
Subtotal 1								48,14	102
Total 1 (Horas presenciales y de trabajo del alumno entre las semanas 1-14)								150,14	
15									
16								3	
17									
18									
Subtotal 2								3	
Total 2 (Horas presenciales y de trabajo del alumno entre las semanas 15-18)									
TOTAL (Total 1 + Total 2. Maximum of 180 hours.)								150,14	