uc3m | Universidad Carlos III de Madrid
Vicerrectorado de Estudios
Apoyo a la docencia y gestión del grado

COURSE: MACHINE THEORY		
DEGREE: MECHANICAL ENGINEERING	YEAR: 3	TERM: 1

WEEKLY PLANNING

WEEK	SESSION	DESCRIPTION	TEACHING (mark X)		SPECIAL ROOM FOR SESSION (Computer class room, audio-visual class room)	WEEKLY PROGRAMMING FOR STUDENT		
			LECTURES	SEMINARS		DESCRIPTION	CLASS HOURS (1,66=50+50 min)	HOMEWORK HOURS (Max. Estim. 6,5h)
1	1	TEST OF PREVIOUS KNOWLEDGE. FUNDAMENTAL MECHANISMS. PASSIVE RESISTANCES. BEARINGS. (I)		X	NO	Prior reading of the proposed topics. Fundamental mechanisms. Passive resistances. Pre-design of support elements	1,66	6,5
	2	PASSIVE RESISTANCE AND BEARINGS EXERCISES	X		VIRTUAL ROOM	Application of knowledge related to the analysis of support elements and passive resistances	1,66	
2	3	CAM MECHANISMS I		X	NO	Prior reading of the proposed topics. Analysis and synthesis of cam-type mechanisms	1,66	6,5
	4	CAM MECHANISMS II	X		VIRTUAL ROOM	Application exercises related to cam mechanisms	1,66	
3	5	EXERCISES OF CAMS ANALYSIS AND SYNTHESIS		X	NO	Application exercises related to cam mechanisms	1,66	6,5
	6	SPUR GEARS I. GEARS FUNDAMENTAL AND NOMENCLATURE	X		VIRTUAL ROOM	Prior reading of the proposed topics. Introduction to gears. Types of gears. Fundamentals of spur gears	1,66	

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4	7	TEST 1 CHAPTERS 1 AND 2 / RESOLUTION TESTS		X	NO	first test - topics 1 and 2	1,66	6,5
	8	SPUR GEARS II. Spur gears cutting.	X		VIRTUAL ROOM	Prior reading of the proposed topics. Interference. Cutting-types.	1,66	
5	9	SPUR GEAR EXERCISES I		X	NO	Exercises of Analysis and selection of spur gears	1,66	6,5
	10	SPUR GEARS III. Spur gears assembling.	X		VIRTUAL ROOM	Prior reading of the proposed topics. Types of Assembly and particularities	1,66	
6	11	SPUR GEAR EXERCISES II. Spur gears cutting.		X	NO	Advanced gear-cutting exercises with spur gears	1,66	6,5
	12	GEAR TRAINS I. Ordinary gear trains and simple planetary gear trains.	X		VIRTUAL ROOM	Prior reading of the proposed topics. Introduction to gear trains. Types of trains. Ordinary and epicyclic gear trains.	1,66	
7	13	GEAR TRAIN EXERCISES I.		X	NO	Application of the analysis of complex epicyclic trains.	1,66	6,5
	14	GEAR TRAINS II. Complex planetary gear trains.	X		VIRTUAL ROOM	Prior reading of the proposed topics. Study of the complex epicyclic gear trains	1,66	
8	15	LAB 2. ANALYSIS AND SYNTHESIS OF MECHANISMS		X	LAB	lab practise number 2	1,66	6,5
	16	GEAR TRAIN EXERCISES II	X		VIRTUAL ROOM	Exercises of ordinary and epicyclic gear trains	1,66	
9	17	TEST 2. CHAPTER 3 AND 4		X		second test - topics 3 and 4	1,66	6,5
	18	Machine regulation: Flywheels. Balancing I	X		VIRTUAL ROOM	Prior reading of the proposed topics. Concept and methods of regulation and balancing of machines. Inertia Flywheels .	1,66	
10	19	Machine regulation EXERCISES I : Flywheels. Balancing.		X	NO	Application exercises for machine regulation	1,66	6,5
	20	Machine regulation EXERCISES II : Flywheels. Balancing.	X		VIRTUAL ROOM	Concept and methods of regulation and balancing of machines. Flywheels of inertia. Exercises	1,66	

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11	21	TEST 3 CHAPTER 4		X	NO	Test topic 5	1,66	6,5
	22	Shocks and percussions in kinematic pairs.	X		VIRTUAL ROOM	Prior reading of the proposed topics. Concept and study of percussion. Study of energy in shocks.	1,66	
12	23	EXERCISES OF APPLICATION OF PERCUSSIONS AND SHOCKS IN MULTI-BODY SYSTEMS		X	NO	Exercises for the application of shocks and percussions to multibody systems	1,66	6,5
	24	Analytical mechanics applied to mechanisms.	X			Prior reading of the proposed topics. Study of analytical methods for the analysis of mechanisms.	1,66	
13	25	LAB 3. CALCULATING THE PROFILE OF A CAM.			LAB	lab practise number 3	1,66	6,5
	26	Analytical mechanics EXERCISES.		X	NO	Exercises of analysis of mechanisms through the use of analytical methods	1,66	
14	27	TEST 4. CHAPTERS 6 AND 7 / TEST SOLUTION	X		VIRTUAL ROOM	fourth test: topics 6 and 7	1,66	6,5
	28	tutoring session		X			1,66	
	29	LAB 4. Technical conference	X		VIRTUAL ROOM		1,66	3,25
						Subtotal 1	**48**	**94**
						Total 1 *(Hours of class plus student homework)*	**142**	
15		Tutorials, handing in, etc					3,6	-
16		Assessment					4	10
17								
18								
						Subtotal 2	**8**	**10**

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			LECTURES	SEMINARS		DESCRIPTION	CLASS HOURS (1,66=50+50 min)	HOMEWORK HOURS (Max. Estim. 6,5h)
						Total 2 *(Hours of class plus student homework)*	**18**	

TOTAL (*Maximun 160 horas*)	**160**