Universidad Carlos III de Madrid

SUBJECT NAME: DESIGN EXTENSION AND MACHINES TEST		
POSTGRADUATE: MASTER'S DEGREE IN INDUSTRIAL ENGINEERING TEACHER: GUTIÉRREZ MOIZANT RAMÓN ALBERTO	ECTS: 6	SEMESTER: 1

CHRONOGRAM OF THE COURSE (detailed version)

WEEK	SESION	DESCRIPTION OF THE CONTENT OF THE SESSION (If applicable, include recoveries, tutorials, delivery of work, etc.)	GROUP (mark X) 1	GROUP (mark X) 2	Indicate space Necessary different classroom (computer room, audiovisual, etc.)	STUDENT'S WORK DURING THE WEEK DESCRIPTION	ATTENDANCE HOURS	WORK HOURS Maximum Week 7 H
1	1	INTRODUCTION TO THE SYNTHESIS OF MECHANISMS				INTRODUCTION TO THE SYNTHESIS OF MECHANISMS	1.67	2
1	2	STRUCTURAL SYNTHESIS OF MECHANISMS PART I				STRUCTURAL SYNTHESIS OF MECHANISMS I	1.67	2
2	3	STRUCTURAL SYNTHESIS OF MECHANISMS PART II				STRUCTURAL SYNTHESIS OF MECHANISMS II	1.67	2
2	4	GENERATION OF FUNCTIONS I				GENERATION OF FUNCTIONS I	1.67	2
3	5	GENERATION OF FUNCTIONS II				GENERATION OF FUNCTIONS II	1.67	3
3	6	GENERATION OF PATHS I				GENERATION OF PATHS I	1.67	2
4	7	GENERATION OF PATHS II. GENERALIZATION TO SPATIAL MECHANISMS				GENERATION OF PATHS II. GENERALIZATION TO SPATIAL MECHANISMS	1.67	3
4	8	PRACTICE OF SYNTHESIS OF MECHANISMS			LAB	PRACTICE OF SYNTHESIS OF MECHANISMS	2	6
5	9	DYNAMICS OF NON-IDEAL MACHINES. CONTINUOUS SYSTEMS				DYNAMICS OF NON-IDEAL MACHINES. CONTINUOUS SYSTEMS	1.67	3

5	10	DYNAMICS OF NON-IDEAL MACHINES. APPLICATION IN THE CASE OF ROLLING BEARINGS				DYNAMICS OF NON-IDEAL MACHINES. APPLICATION IN THE CASE OF ROLLING BEARINGS	1.67	2
6	11	PRACTICE ON VIBRATIONS GENERATED BY ROLLING BEARINGS DEPENDING ON THE TYPE OF DEFECT			LAB	PRACTICE ON VIBRATIONS GENERATED BY ROLLING BEARINGS DEPENDING ON THE TYPE OF DEFECT	2	6
6	12	NON-LINEAR VIBRATIONS IN MACHINES				NON-LINEAR VIBRATIONS IN MACHINES	1.67	3
7	13	SELF-EXCITED SYSTEM VIBRATIONS AND PARAMETRIC RESONANCES				SELF-EXCITED SYSTEM VIBRATIONS AND PARAMETRIC RESONANCES	1.67	3
7	14	APPLICATIONS OF NON-LINEAR VIBRATIONS. FRICTIONAL INSTABILITY				APPLICATIONS OF NON-LINEAR VIBRATIONS. FRICTIONAL INSTABILITY	1.67	2
8	15	STOCHASTIC AND STATIONARY VIBRATIONS				STOCHASTIC AND STATIONARY VIBRATIONS	1.67	3
8	16	CONTINUOUS EVALUATION: SYNTHESIS OF NON-LINEAR MECHANISMS AND VIBRATIONS				CONTINUOUS EVALUATION: SYNTHESIS OF NON-LINEAR MECHANISMS AND VIBRATIONS	2	7
9	17	FEM MODELING				GENERAL CONCEPTS AND MATHEMATICAL FOUNDATION	1.67	4
9	18	FEM MODELING				PRE-PROCESSING, SOLUTION AND POST-PROCESSING STAGES	1.67	4
10	19	FEM MODELING			COMPUTER CLASSROOM	FEM Modeling	2	3
10	20	FEM MODELING			COMPUTER CLASSROOM	FEM Modeling	2	3
11	21	FEM MODELING			COMPUTER CLASSROOM	FEM Modeling	2	3
11	22	FEM MODELING			COMPUTER CLASSROOM	FEM Modeling	2	3

12	23	TESTING TECHNIQUES IN MECHANICAL ENGINEERING				TESTING TECHNIQUES IN MECHANICAL ENGINEERING	1.67	4
12	24	STRAIN MEASUREMENT TECHNIQUES: STRAIN GAGES				STRAIN MEASUREMENT TECHNIQUES: STRAIN GAGES	1.67	3
13	25	PRACTICE WITH STRAIN GAGES			LAB	PRACTICE WITH STRAIN GAGES	2	1
13	26	STRAIN MEASUREMENT TECHNIQUES: PHOTOELASTICITY				STRAIN MEASUREMENT TECHNIQUES: PHOTOELASTICITY	1.67	4
14	27	PRACTICE OF PHOTOELASTICITY			LAB	PRACTICE OF PHOTOELASTICITY	2	1
14	28	MODAL ANALYSIS				MODAL ANALYSIS	1.67	3
15	29	METROLOGICAL CONCEPTS IN MECHANICAL ENGINEERING I				METROLOGICAL CONCEPTS IN MECHANICAL ENGINEERING I	1.67	4
15	30	METROLOGICAL CONCEPTS IN MECHANICAL ENGINEERING II				METROLOGICAL CONCEPTS IN MECHANICAL ENGINEERING II	1.67	3
	31	TUTORIALS AND FINAL EXAM					2	6
SUBTOTAL							55	100
TOTAL HOURS							**155 (6 ECTS)**	