Universidad Carlos III de Madrid

DENOMINACIÓN ASIGNATURA: CALCULUS II		
DEGREE: AUTOMATION AND INDUSTRIAL ELECTRONICS ENGINEERING	YEAR: FIRST	TERM: SECOND

CRONOGRAMA ASIGNATURA

WEEK	SESSION	DESCRIPTION OF THE CONTENT OF EACH SESSION	GRUPO (Marcar X)		Indicate if an additional room is required (e.g. laboratory)	Indicate with Yes/No If the session involves 2 teachers (*)	STUDENTS WORK DURING THE WEEK		
			THEORY GROUP	PROBLEM GROUP			DESCRIPTION OF THE MATERIAL TO BE STUDIED (References: *Salas-Hille-Etgen, Marsden-Tromba* or *Nagle-Saff* of the basic bibliography; collection of problems distributed at the beginning of the course)	HOURS OF LECTURES	STUDENTS WORK (MAX. 7 HOURS)
1	1	THE EUCLIDEAN SPACE R^N, FUNCTIONS OF SEVERAL VARIABLES, LEVEL SETS, INTRODUCTION TO THE NOTION OF LIMIT	X			NO	SECTIONS 14.1, 14.2, 14.3 AND 14.5 OF SALAS AND/OR SECTION 2.1 OF MARSDEN	1,66	6,5
1	2	DISCUSSION AND SOLUTION OF PROBLEMS		X		NO	PROBLEMS IN SECTION 1.1	1,66	
2	3	LIMITS AND CONTINUITY	X			NO	SECTION 14.6 OF SALAS AND/OR SECTION 2.2 OF MARSDEN	1,66	6,5
2	4	DISCUSSION AND SOLUTION OF PROBLEMS		X		NO	PROBLEMS IN SECTION 1.1	1,66	
3	5	DIFFERENTIABILITY AND PARTIAL DERIVATIVES, MATRIX OF DERIVATIVES AND GRADIENT VECTOR	X			NO	SECTIONS 15.1 Y 15.4 OF SALAS AND/OR SECTION 2.3 OF MARSDEN	1,66	6,5
3	6	DISCUSSION AND SOLUTION OF PROBLEMS		X		NO	PROBLEMS: SECTIONS 1.2 AND 1.3	1,66	
4	7	CHAIN RULE, DIRECTIONAL DERIVATIVES FIRST SELF-EVALUATION	X			NO	SECTIONS 15.2 AND 15.3 OF SALAS AND/OR SECTIONS 2..5 AND 2.6 OF MARSDEN	1,66	6,5

4	8	DISCUSSION AND SOLUTION OF PROBLEMS		X		NO	PROBLEMS IN SECTION 1.4	1,66	
5	9	HIGHER ORDER DERIVATIVES AND LOCAL EXTREMA	X			º	SECTION 15.5 OF SALAS AND/OR SECTIONS 3.1 AND 3.3 OF MARSDEN	1,66	6,5
5	10	DISCUSSION AND SOLUTION OF PROBLEMS		X		NO	PROBLEMS IN SECTIONS 2.1 AND 2.2	1,66	
6	11	CONSTRAINED EXTREMA, LAGRANGE MULTIPLIERS, GLOBAL EXTREMA	X			NO	SECTIONS 15.5 OF SALAS AND/OR SECTION 3.4 OF MARSDEN	1,66	6,5
6	12	DISCUSSION AND SOLUTION OF PROBLEMS		X		NO	PROBLEMS IN SECTION 2.3	1,66	
7	13	INTEGRALS IN R^N FIRST PARTIAL EVALUATION	X			NO	SECTIONS 16.2 AND 16.3 OF SALAS AND/OR SECTIONS 5.1, 5.2, 5.3 AND 5.6 OF MARSDEN	1,66	6,5
7	14	DISCUSSION AND SOLUTION OF PROBLEMS		X		NO	PROBLEMS IN SECTION 3.1	1,66	
8	15	DOUBLE AND TRIPLE INTEGRALS, THEOREM OF FUBINI, APPLICATIONS	X			NO	SECTIONS 16.3 AND 16.7 OF SALAS AND/OR SECTION 5.4 OF MARSDEN	1,66	6,5
8	16	DISCUSSION AND SOLUTION OF PROBLEMS		X		NO	PROBLEMS IN SECTION 3.1	1,66	
9	17	CHANGE OF COORDINATES, POLAR, CILINDRICAL AND SPHERICAL COORDINATES, APPLICATIONS	X			NO	SECTIONS 16.8, 16.9 AND 16.10 OF SALAS AND/OR SECTION 6.2 OF MARSDEN	1,66	6,5
9	18	DISCUSSION AND SOLUTION OF PROBLEMS		X		NO	PROBLEMSS IN SECTIONS 3.2 AND 3.3	1,66	
10	19	PATH AND LINE INTEGRALS, CONSERVATIVE FIELDS	X			NO	SECTIONS 17.1, 17.2 AND 17.3 OF SALAS AND/OR SECTIONS 7.1, 7.2 AND 8.3 OF MARSDEN	1,66	6,5
10	20	DISCUSSION AND SOLUTION OF PROBLEMS SECOND SELF-EVALUATION		X		NO	PROBLEMS IN SECTION 4.1	1,66	
11	21	PARAMETRIZATION OF SURFACES, SURFACE INTEGRALS	X			NO	SECTIONS 17.6 AND 17.7 OF SALAS AND/OR SECTIONS 7.3, 7.4, 7.5 AND 7.6 OF MARSDEN	1,66	6,5
11	22	DISCUSSION AND SOLUTION OF PROBLEMS		X		NO	PROBLEMS IN SECTION 4.2	1,66	
12	23	THEOREMS OF GREEN, STOKES AND GAUSS	X			NO	SECTIONS 17.5, 17.9 AND 17.10 DEL SALAS AND/OR SECTIONS 8.1, 8.2 AND 8.4 OF MARSDEN	1,66	6,5

12	24	DISCUSSION AND SOLUTION OF PROBLEMS		X		NO	PROBLEMS IN SECTION 4.3	1,66	
13	25	LAPLACE TRANSFORM	X			NO	SECTIONS 7.1, 7.2, 7.3 AND 7.4 OF NAGLE	1,66	6,5
13	26	DISCUSSION AND SOLUTION OF PROBLEMS		X		NO	PROBLEMS IN SECTIONS 5.1 AND 5.2	1,66	
14	27	LINEAR DIFFERENTIAL EQUATIONS	X			NO	SECTIONS 7.5, 7.6 AND 7.7 OF NAGLE	1,66	6,5
14	28 29	DISCUSSION AND SOLUTION OF PROBLEMS		X		NO	PROBLEMS IN SECTION 5.3	1,66	
SUBTOTAL **TOTAL 1 (FACE-TO-FACE AND PERSONAL WORKSHOP BETWEEN WEEKS 1-14)**								**48,33** **139,33**	**91**
15		TUTORIALS AND PREPARATION FOR EXAMS SECOND PARTIAL EVALUATION	X					2	6
16-18		TUTORIALS AND PREPARATION FOR EXAMS						3	6
TOTAL 2 (FACE-TO-FACE AND PERSONAL WORKSHOP BETWEEN WEEKS 15-18) **TOTAl (TOTAL 1 + TOTAL 2)**								**17** **156,33**	