Universidad Carlos III de Madrid
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DENOMINACIÓN ASIGNATURA: CALCULO II		
GRADO: INGENIERÍA DE LA ENERGÍA	**CURSO: 1º**	**CUATRIMESTRE: 2º**

WEEKLY PLANNING

WEEK	SESSION	DESCRIPTION OF THE CONTENT	GROUP (marcar X)		Indicate special classroom	TRABAJO SEMANAL DEL ALUMNO		
			BIG	REDUC.		DETAILED DESCRIPTION	PRESENCIAL HOURS	WORKING HOURS (Max. 7h per week)
1	1	Euclidean space in n dimensions. Continuity.	X			Cauchy sequences. Completeness of R^n. Limits and continuity of functions of several variables.	1,66	
1	2	Problem solving and discussion		X			1,66	6,5
2	3	Partial derivatives and differentiability	X			Gradeint. Explicit formula of the tangent plane. Jacobian Matrix	1,66	
2	4	Problem solving and discussion		X			1,66	6,5
3	5	Higher order derivatives. Chain rule. Level curves	X			Equality of crossed partial derivatives. Taylor's formula. Properties of the level curves.	1,66	
3	6	Problem solving and discussion		X			1,66	6,5
4	7	Local Extrema. Constrained extrema.	X			Maxima, mminims y saddle points. Sylvester's Criterion.	1,66	6,5

4	8	Problem solving and discussion		X			1,66	
5	9	Global extrema	X			Open, closed, bounded and compact sets. Description of regions of the plane.	1,66	
5	10	Problem solving and discussion		X			1,66	6,5
6	11	Integrals on R^n	X			Riemann Integral. Iterated integrals and Cavalieri's Principle. Properties.	1,66	
6	12	Problem solving and discussion		X			1,66	6,5
7	13	Integration on general domains	X			Type I and Type II regions. Fubini's Theorem. Change of the order of integration.	1,66	
7	14	Problem solving and discussion		X			1,66	6,5
8	15	Variable change formula. Applications of the integrals.	X			Moments of inertia, center of mass	1,66	
8	16	Problem solving and discussion		X			1,66	6,5
9	17	Path Integral.	X			Paths in R^2 y R^3. Vector Fields. Definition of the line integral.	1,66	
9	18	Problem solving and discussion		X			1,66	6,5
10	19	Line integral. Conservative fields.	X			Definitions and applications.	1,66	
10	20	Problem solving and discussion		X			1,66	6,5
11	21	Divergence, curl and curl_2. Green's Theorem	X			Geometric interpretation of the divergence and the curl.. Proof of Green's Theorem. Applications.	1,66	
11	22	Problem solving and discussion		X			1,66	6,5
12	23	Surface Integrals	X			Parametrisation of surfaces in R^3. Definition of surface integrals. Applications.	1,66	
12	24	Problem solving and discussion		X			1,66	6,5
13	25	Stokes' Theorem.	X			Statement of Stokes' Theorem. Relationship with Conservative fields. Applications.	1,66	6,5

13	26	Problem solving and discussion		X			1,66	
14	27	Gauss' Theorem	X			Statement of Gauss' Theorem. Applications.	1,66	6,5
14	28	Problem solving and discussion		X			1,66	
						Subtotal 1	**46,5**	**91**
		Total 1 *(Presential hours and home work in the weeks 1-14)*					**137,5**	
15		Recovery lectures, tutorials, homework delivery, etc					1,66	6,5
16		Preparation of the final evaluation and evaluation					3	
17								
18								
						Subtotal 2	**3**	
		Total 2 *(Presential hours and home work in the weeks 1-14)*					**11,15**	
TOTAL *(Total 1 + Total 2)*	**149**							