



UNIVERSIDAD NACIONAL DE ENTRERÍOS
 FACULTAD DE INGENIERIA
 CENTRO DE MEDIOS
 BIBLIOTECA

Nº 1 841

CHAPTER I: VECTORS

1.1	The vector space R^3	2
1.2	The cross product	13
1.3	Spheres, planes, and lines	24
1.4	The vector space R^n	37
1.5	Linear dependence and bases	42

CHAPTER II: CURVES IN R^n

2.1	Definitions and elementary properties	59
2.2	Newton's law of motion	69
2.3	The geometry of curves in R^3	77

CHAPTER III: DIFFERENTIATION OF FUNCTIONS OF TWO VARIABLES

3.1	Definitions, examples, and elementary theorems	89
3.2	Polynomials of degree one	101
	Appendix: Two-dimensional linear programming	107
3.3	Partial derivatives, the gradient, and the chain rule	115
3.4	Computations with the chain rule	133
3.5	The implicit function theorem	140
3.6	Derivatives of higher order	153
3.7	The Taylor expansion	160
3.8	Maxima and minima	165

CHAPTER IV: DOUBLE INTEGRALS, VECTOR FIELDS, AND LINE INTEGRALS

4.1	Double integrals	174
4.2	Vector fields	188
4.3	Line integrals	195
4.4	Green's theorem	208
4.5	Change of variable	222

CHAPTER V: FUNCTIONS OF n VARIABLES

5.1	Continuity, partial derivatives, and gradients	234
5.2	The implicit function theorem	244
5.3	Taylor expansions	250
5.4	Vector fields and line integrals in R^3	253
5.5	Surface integrals and Stokes' theorem	258
5.6	Triple integrals	273
5.7	The divergence theorem	281
5.8	A very brief introduction to differential forms	289

INDEX	294
-------	-----

Nº 1 8411

UNIVERSIDAD NACIONAL DE ENTRE RÍOS
FACULTAD DE INGENIERÍA
CENTRO DE MEDIOS
BIBLIOTECA