

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
SCHEME OF TEACHING AND EXAMINATION B.E. – II

(CHEMICAL ENGG.) SEMESTER – 3

Course No.	Course	TEACHING SCHEME			Examination Scheme			Grand total	
		<i>L</i>	<i>P</i>	<i>T</i>	THEORY	PRACTICAL TUTORIAL	T.W.		
301	Mathematics III	3	2	0	100	--	--	50	150
302	Engg. ChemistryII	3	0	2	100	30	20	--	150
303	Basic Electronics	3	1	2	100	30	20	25	175
304	Strength of Mat.I	3	1	2	100	30	20	25	175
305	Electrical Tech.	3	0	2	100	30	20	--	150
306	Unit Process	3	0	0	100	--	--	--	100
	TOTAL :-	18	04	08	600	120	80	100	900

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
MATHEMATICS III

SEMESTER- III

TEACHING SCHEME

L=3; P/D=0; TA=2

EXAMINATION SCHEME

Theory = 3hours; Marks= 100

PRACTICAL / DRAWING

Internal evaluation marks: 20

External evaluation marks: 30

Total Marks: 50

Multiple Integrals

Reorientation of concept of integrals, double and triple integrals, evaluation techniques, change of order of integration, integrals in polar and cylindrical coordinated, change of variables of multiple integrals. Application of double and triple integrals for evaluation of area, volume and mass.

Vector Calculus

Basic concepts of Vector Calculus, line integrals, scalar and vector point functions, differential operator, gradient, directional derivative, divergence, curl and Laplacian with their properties and physical interpretation.

Surface integrals, Green's, Gauss and Stokes theorem (without proof), Applications.

Gamma, Beta and Error functions

Improper integrals and their convergence, Gamma and Beta functions and their properties. Error functions, Evaluation and application.

Fourier Series

Fourier expansion of functions with arbitrary period, in particular periodic functions with period 2π , conditions of convergence. Fourier series of even and odd functions, Half range fourier series.

Partial Differential Equations (pde)

Basic mathematical concepts, First order pde of Lagrange's form, $Pp+Qq=R$, Second order pde of mathematical Physics (Heat, Wave and Laplace eq.) with standard boundary conditions, Solution by separation of variable method using Fourier Series. Partial differential equations Modelling.

Complex Variables:

Basic mathematical concepts, Analytic functions, C-R equations, Harmonic functions, Related problems, Linear transformation, of complex domains some special transformation bilinear transformation Conformal Mapping and applications, complex Integration including contour Integration (Simple cases).

REFERENCES:

1. E.Kreyszig, 'Advanced Engineering Mathematics', John Wiley International Student Ed.(1995).
2. C.R.Wylle, 'Advanced Engineering Mathematics', Mc Graw Hill, International Student Ed. (1993)