MEHRAN UNIVERSITY OF ENGINEERING AND TECHNOLOGY, JAMSHORO.

FRM-001/00/QSP-004
Dec. 01, 2001

TENTATIVE TEACHING PLAN

DEPARTMENT / INSTITUTE / DIRECTORATE: **BSRS**

Name of Teacher:

Subject: Applied Calculus **Batch:** **Year:** 1st **Term:** 1st

Code: MTH 102 (04+00) CH

Term Starting Date: **Term Suspension Date:**

S. #	Topic	No. of lecture/ hours required
01	Introduction to syllabus.	01
02	Functions; mathematical and physical meaning of functions.	01
03	Graph of various functions.	01
04	Circular and hyperbolic functions	01
05	Case study.	01
06	Limits; theorems of limit and their applications.	02
07	Some useful limits. Left and right hand limits.	01
08	Continuous and discontinuous functions.	01
09	Case study.	01
10	Derivatives; geometrical and physical meaning of derivatives.	01
11	Rules of derivatives with applications.	01
12	Derivative of trigonometric and hyperbolic functions.	01
13	Logarithmic differentiation.	01
14	Case study.	02
15	Higher derivatives; introduction and examples.	02
16	Leibnitz's theorem.	01
17	Rolle's theorem. Mean value theorem.	01
18	Taylor's and Maclaurin's series.	01
19	Evaluation of limit by using L'Hospital rule.	01
20	Indeterminant forms of limit.	02
21	Application of limits; asymptotes, tangent and normal.	02
22	Curvature and radius of curvature.	01
23	Maxima and minima of a function of single variable.	01
24	Differentials and their applications.	01

25	Case study	01
26	Partial derivatives; Euler's theorem, applications.	02
27	Maxima and minima of a function of two variables.	01
28	Case study	01
29	Integral calculus; methods of integration, integration by substitution.	02
30	Integration by parts.	02
31	Integration of rational and irrational functions.	02
32	Definite integrals.	01
33	Improper integrals.	01
34	Gamma and Beta functions.	01
35	Reduction formula.	01
36	Applications of integrals; case study.	02
37	Vectors; scalar and vector product of three and four functions.	01
38	Volume of parallelepiped and tetrahedron.	01
39	Vector calculus; differentiation and integration of vectors.	01
40	Case study.	01
41	∇ operator; gradient, divergence and curl.	01
42	Case study.	01
	Total Lecture Hours	**52**

Signature of Teacher: **Date:**

Remarks of DMRC:

Signature of Chairman / Director: **Date:**