Lesson Plan

MTH 2001: CALCULUS-II (GP2)

(With effect form 08.01.2020)

REQUIRED COURSE TEXTBOOKS:

1. **CALCULUS EARLY TRANSCENDENTALS BY JAMES STEWART(7th Edition)**

Course format : 4 hours/ week = 3 credits

Grading - external: 60 % theory Exam

Grading - internal : 35 % assignments + 5% attendance = 40 %

Sl.No.	Topics	Lecture/hours	Chapter	Problems covered(Class Work(CW)/Assignment(A))
1	Three dimensional co-ordinate systems	1	12.1	CW-2,8, 10, 11, 16, 34, 35, 41 A-3,17,25
2	Vectors	2	12.2	CW-Ex-7, 2, 5, 20, 26, 27, 29, 30 A-15,21,25,28,35
3	The dot product	2	12.3	CW-9,18,24,26,28,29,31,40,52 A-1,10,17,27,30,34,38
4	The cross product	2	12.4	CW-19,27,35,39,44,48 A-Ex-3,Ex-4,29, 43
5	Equations of lines and planes	1	12.5	CW-Ex-2,3,22,24,54,57,59 A-Ex- 3,2,23,55
6	Cylinders and quadratic surfaces	1	12.6	CW-1,18,30,41 A-3,31
7	Vector functions and space curves	1	13.1	CW-Ex-4,1,3,11,18,29,41,48 A-7,30,40
8	Derivatives and integrals of vector functions	1	13.2	CW-12,17,23,36,44,49 A-3,20,25
9	Arc length and curvature	2	13.3	CW-3,20,23,25,43,49,53 A-4,17,21,50
10	Motion in space: velocity and acceleration	1	13.4	CW-Ex-6,11,20,26,39 A-13,25,42
11	Function of Several variables	1	14.1	CW-9,15,27,43 A-20,22,23,47
12	Limit and Continuity	1	14.2	CW-Ex-4,10,21,37,39 A-11,16,25
13	Partial derivatives	1	14.3	CW-22,34,46,41,49,62,63,81 A-43,52,58,61,67,76
14	Tangent Planes and Linear approximations	1	14.4	CW-2,4,11,19,26,31 A-5,17,32
15	The chain Rule	1	14.5	CW-Ex-3,3,8,23,30,34,47,52 A-6,11,24,28,48
16	Directional derivatives and the gradient vector	1	14.6	CW-6,9,11,24,33,43 A-5,12,16,25,28
17	Maximum and minimum Values	1	14.7	CW-Ex-6,5,18,31,39,43 A-12,44,48
18	Lagrange multipliers	1	14.8	CW-Ex-1,Ex-2, 3 A-6,

19	Double integrals over rectangles	1	15.1	CW-1 A-6
20	Iterated integrals	1	15.2	CW-7,15,29 A-1,8,19,26
21	Double integrals over general regions	2	15.3	CW-Ex-2,2,10,52 A-4,14,50
22	Double integrals in polar coordinates	1	15.4	CW-Ex-1,Ex-3,5,20 A-15,23
23	Application of Double integrals	1	15.5	CW-Ex-2,Exercise-3,17 A-Ex-4,4
24	Surface area	1	15.6	CW-Ex-1,EX-2,3 A-1,5
25	Triple integrals	1	15.7	CW-EX-2,6,10,19,39 A-7,20,45
26	Triple integrals in cylindrical co-ordinates	1	15.8	CW-EX-1,Ex-4,3, A-1,29
27	Triple integral in spherical co-ordinates	1	15.9	CW-Ex-1,Ex-2,21 A-EX-5,1,3
28	Change of Variables in multiple integrals	1	15.10	CW-1,15 A-3,17
29	Vector fields	1	16.1	CW-21 A-24
30	Line integrals	1	16.2	CW-Ex-1,1,10,19,39 A-4,13,21
31	The Fundamental theorem for Line integrals	1	16.3	CW-Ex-4,4,12,,30 A-9,20
32	Green's Theorem	1	16.4	CW-3,9,28 A-2,10
33	Curl and Divergence	1	16.5	CW-7,18,27 A-8,26
34	Parametric surfaces and their areas	2	16.6	CW-2,21,39 A-25,40
35	Surface integrals	2	16.7	CW-5,25 A-26
36	Stokes' Theorem	2	16.8	CW-2,13 A-3
37	The divergence theorem	1	16.9	CW-1,8 A-7

N.B.: - 1st Quiz Test and Assignment Test-I 17.02.2020 – 22.02.2020

2nd Quiz Test and Assignment Test-II 06.04.2020 – 11.04.2020