K. D.K. College of Engineering, Nagpur

Department of Mechanical Engineering

Teaching Plan

Sr.No.	Unit	Topic Code	Topic
1	1	101	INTRODUCTION OF CAD
2		102	DIFFERENCE BETWEEN CONVENTIONAL & CAD DESIGN
3		103	RASTERISATION TECHNIQUES FRAME BUFFER, N-BIT PLANE BUFFERS, SIMPLE COLOR FRAME BUFFER
4		104	GENERATION OF BASIC GEOMETRIC ENTITIES LIKE LINE BY USING PARAMETRIC EQUATION
5		105	GENERATION OF BASIC GEOMETRIC ENTITIES LIKE LINE BY USING NON-PARAMETRIC EQUATION
6		106	GENERATION OF BASIC GEOMETRIC ENTITIES LIKE CIRCLE BY USING PARAMETRIC EQUATION
7		107	GENERATION OF BASIC GEOMETRIC ENTITIES LIKE CIRCLE BY USING NON-PARAMETRIC EQUATION
8		108	GENERATION OF BASIC GEOMETRIC ENTITIES LIKE ELLIPSE BY USING PARAMETRIC & NON-PARAMETRIC EQUATIONS
9	2	201	INTRODUCTION TO WINDOWING AND CLIPPING, LINE CLIPPING
10		202	TWO DIMENSIONAL TRANSFORMATION LIKE TRANSLATION, SCALING, ROTATION, REFLECTION, SHEAR
11		203	CONCEPT OF HOMOGENEOUS TRANSFORMATION
12		204	CONCATENATION PROCESS AND INVERSE TRANSFORMATION
13		205	NUMERICALS ON 2-D TRANSFORMATION
14		206	NUMERICALS ON 2-D TRANSFORMATION
15		207	THREE DIMENSIONAL TRANSFORMATION LIKE TRANSLATION, ROTATION, REFLECTION
16		208	NUMERICALS ON 3-D TRANSFORMATION
17	3	301	INTRODUCTION TO SURFACES AND ITS REPRESENTATION USING PARAMETRIC EQUATIONS
18		302	BAIZER CURVES
19		303	TYPES SOLID MODELING
20		304	WIRE FRAME, SURFACE AND SOLID MODELING
21		305	GENERATION OF GRAPHICS FOR SOLID MODELING.
22		306	PRIMITIVE INSTANCING, SWEEPING,
23		307	CSG AND B-REP OF MODELS LIKE BOX, CONE
24		308	ASSEMBLY MODELLING
25	4	401	FUNDAMENTAL CONCEPT OF FEM
26		402	PLAIN STRESS AND STRAIN
27		403	POTENTIAL ENERGY APPROACH, GALERKIN'S APPROACH, CO-ORDINATES AND SHAPE FUNCTION, ASSEMBLY OF GLOBAL STIFFNESS MATRIX AND LOAD VECTOR
28		404	PROPERTIES OF STIFFNES MATRIX, FINITE ELEMENT EQUATIONS, QUADRATIC SHAPE FUNCTION
29		405	FEM 1-D NUMERICALS
30		406	FEM 1-D NUMERICALS

31		407	FEM 1-D NUMERICALS, TEMPERATURE EFFECT
32		408	FEM 1-D NUMERICALS ON TORSION OF A CIRCULAR SHAFT
33	5	501	TWO DIMENSIONAL FEM ANALYSIS
34		502	SHAPE FUNCTION AND ELEMENT STIFFNESS MATRUIX, MATERIAL PROPERTY MATRIX
35		503	NUMERICALS ON 2-D TRUSS ELEMENT
36		504	NUMERICALS ON 2-D TRUSS ELEMENT
37		505	NUMERICALS ON 2-D TRUSS ELEMENT
38		506	CONSTRAIN TRAIN TRIANGLE (CST)
39		507	NUMERICALS ON CST ELEMENTS
40		508	NUMERICALS ON CST ELEMENTS
41	6	601	METHOD OF OPTIMIZATION
42		602	JOHNSON METHOD OF OPTIMUM DESIGN
43		603	PROBLEMS ON NORMAL SPECIFICATION
44		604	PROBLEMS ON NORMAL SPECIFICATION
45		605	PROBLEMS ON NORMAL SPECIFICATION
46		606	PROBLEMS ON REDUNDANT SPECIFICATION
47		607	PROBLEMS ON REDUNDANT SPECIFICATION
48		608	PROBLEMS ON REDUNDANT SPECIFICATION