◆ MECHANICAL ENGINEERING ◆ ELECTIVE SUBJECT ◆ ENGINEERING CODE PEC-MEL 422

COURSE OBJECTIVE
1. TO ILLUSTRATE THE PRINCIPLE OF MATHEMATICAL MODELING OF ENGINEERING PROBLEMS
2. TO INTRODUCE THE BASICS AND APPLICATION OF FINITE ELEMENT METHOD

COURSE OUTCOME
• UPON COMPLETION OF THE COURSE, STUDENTS WILL UNDERSTAND THE FEM FORMULATION AND ITS APPLICATION TO SIMPLE STRUCTURAL AND THERMAL PROBLEMS

COURSE CONTENT
HISTORICAL BACKGROUND, MATHEMATICAL MODELING OF FIELD PROBLEMS IN ENGINEERING. ONE DIMENSIONAL SECOND ORDER EQUATION. TWO DIMENSIONAL EQUATIONS. NATURAL COORDINATE SYSTEMS.

REFERENCE BOOKS
1. REDDY J.N., AN INTRODUCTION TO FINITE ELEMENT METHOD, 3RD ED., TATA MCGRAW HILL, 2005.
2. SESHU P., TEXT BOOK OF FINITE ELEMENT ANALYSIS, PRENTICE HALL, NEW DELHI, 2007.
3. RAO S.S., THE FINITE ELEMENT METHOD IN ENGINEERING, 3RD ED., BUTTERWORTH HEINEMANN, 2004.
4. CHANDRUPATLA BELEGUNDU, INTRODUCTION TO FINITE ELEMENTS IN ENGINEERING, 3RD ED., PRENTICE HALL, 1990..

COURSE SOFTWARE
◆ APM WINMACHINE (MULTIPHYSICS)
◆ KOMPAS 2D/3D/PDM/BOM
◆ VARICAD 2D/3D/PDM/BOM
◆ UNIVERSAL MECHANISM(MBD).
◆ SAM (MECHANISM DESIGN)
◆ SALTIRE SOFTWARE
◆ DOCUMENTATION & PRINTING
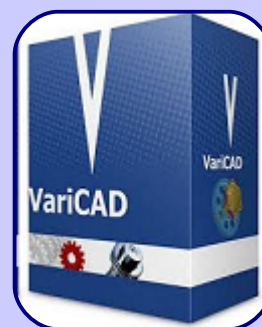
APM WINMACHINE
APM CAM/APM PLAIN/APM SCREW/APM STRUCTURE3D/APM DYNAMICS/APM BEAM/APM GRAPH/APM STUDIO APM DRIVE/APM TRANS/APM SHAFT/APM BEAR/APM JOINT/APM SPRING/APM BASE/APM MECHANICAL DATA/APM MATERIAL DATA/APM SECTION DATA/APM CONSTRUCTION DATA/APM BOOK

APM WINMACHINE

KOMPAS 3D

VARICAD

DESCRIPTION	ONLINE	TRAINING CENTRE	WEBINAR	REMARKS
FINITE ELEMENT ANALYSIS	REGISTRATION	DOCUMENTS	COUNSELLING	OWN LAPTOP
ONLINE	2/UNIT TRAINING	4/UNIT ASSIGNMENT	2/UNIT ASSIGNED	SHEDULE
PRESENTATION	WEBINAR	NETWORK	PRESENTATION	2/UNIT ASSIGNED
PERIOD	2 HRS/1/UNIT IN SEQUENCE	NETWORKING/HRS*	PRESENTATION	* BROWSING FEE
PRICE (SEMESTER)	BY MAIL	* BROWSING FEE	NO COST	CERTIFICATE