



DEMAND

# PAVIATH INTEGRATED SOLUTION

ENGG ALLIED

MECHANICAL

FINITE ELEMENT ANALYSIS

Paviath ONLINE

◆ MECH ALLIED ◆ AUTOMOBILE ENGINEERING ◆ SEMESTER VII ◆ ENGINEERING CODE MEG603

### COURSE OBJECTIVE

TO INTRODUCE THE CONCEPTS OF MATHEMATICAL MODELING OF ENGINEERING PROBLEMS.  
TO APPRECIATE THE USE OF FEM TO A RANGE OF ENGINEERING PROBLEMS.

### COURSE OUTCOME

UPON COMPLETION OF THIS COURSE, THE STUDENTS CAN ABLE TO UNDERSTAND DIFFERENT MATHEMATICAL TECHNIQUES USED IN FEM ANALYSIS AND USE OF THEM IN STRUCTURAL AND THERMAL PROBLEM

### COURSE CONTENT

UNIT I INTRODUCTION.  
UNIT II ONE-DIMENSIONAL PROBLEMS.  
UNIT III TWO DIMENSIONAL SCALAR VARIABLE PROBLEMS.  
UNIT IV TWO DIMENSIONAL VECTOR VARIABLE PROBLEMS.  
UNIT V ISOPARAMETRIC FORMULATION

### REFERENCE BOOKS

1. REDDY, J.N., "AN INTRODUCTION TO THE FINITE ELEMENT METHOD", 3RD EDITION, TATA MCGRAW-HILL, 2005
2. SESHU, P., "TEXT BOOK OF FINITE ELEMENT ANALYSIS", PRENTICE-HALL OF INDIA PVT. LTD., NEW DELHI, 2007.
1. RAD, S.S., "THE FINITE ELEMENT METHOD IN ENGINEERING", 3RD EDITION, BUTTERWORTH HEINEMANN, 2004.
2. LOGAN, D.L., "A FIRST COURSE IN FINITE ELEMENT METHOD", THOMSON ASIA PVT. LTD., 2002.
3. ROBERT D. COOK, DAVID S. MALKUS, MICHAEL E. PLESHA, ROBERT J. WITT, "CONCEPTS AND APPLICATIONS OF FINITE ELEMENT ANALYSIS", 4TH EDITION, WILEY STUDENT EDITION, 2002.
4. CHANDRUPATLA & BELAGUNDU, "INTRODUCTION TO FINITE ELEMENTS IN ENGINEERING", 3RD EDITION, PRENTICE HALL COLLEGE DIV, 1990.
5. BHATTI ASGHAR M., "FUNDAMENTAL FINITE ELEMENT ANALYSIS AND APPLICATIONS", JOHN WILEY & SONS, 2013

### COURSE SOFTWARE

- ◆ APM WINMACHINE (MULTIPHYSICS)
- ◆ KOMPAS 2D/3D/PDM/BDM
- ◆ VARICAD 2D/3D/PDM/BDM
- ◆ 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	SCHEDULE
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