



DEMAND

# PAVIATH INTEGRATED SOLUTION

ENGG ALLIED

MECHANICAL

COMPUTER AIDED MARINE ENGINEERING DESIGN AND ANALYSIS

Paviath ONLINE

◆ MECH ALLIED ◆ MARINE ENGINEERING ◆ SEMESTER V ◆ ENGINEERING CODE MV6501

### COURSE OBJECTIVE

TO IMPART PRACTICAL KNOWLEDGE TO THE STUDENTS ABOUT COMPUTER AIDED DESIGN AND DRAWING OF MARINE MACHINE ELEMENTS

1. ABDULLA SHARIF, "MACHINE DESIGN", 3RD EDITION, DHANPAT ROY & SONS, NEW DELHI, 1995.
2. PANDYA & SHAW, "ELEMENTS OF MACHINE DESIGN", 1ST EDITION, CHAROTAR PUBLISHING, MUMBAI, 1997.
3. GROOVER AND ZIMMERS, "CAD / CAM : COMPUTER AIDED DESIGN AND MANUFACTURING", PRENTICE HALL OF INDIA NEW DELHI, 1994.
4. R.S.KHURMI AND J.K.GUPTA, "MACHINE DESIGN", 5TH EDITION, EURASIA PUBLISHING, NEW DELHI, 2005.
5. TIRUPATHI R. CHANDRUPATLA, "FINITE ELEMENT ANALYSIS FOR ENGINEERING AND TECHNOLOGY", 1ST ED., UNIVERSITIES PRESS, 2013

### COURSE OUTCOME

- VELOCITY AND ACCELERATION OF VARIOUS KINEMATIC LINKAGES
- FOUR BAR AND SLIDER CRANK MECHANISMS USING ANALYTICAL AND GRAPHICAL METHODS.
- FORCE ANALYSIS OF MECHANISMS AND TURNING MOMENT DIAGRAMS AND FLYWHEEL.
- VARIOUS PARAMETERS OF GEARS AND GEAR TRAINS.
- GOVERNORS AND GYROSCOPES.
- CONCEPT OF BALANCING.
- FREE AND FORCED VIBRATION OF SINGLE DEGREE OF FREEDOM SYSTEMS, TWO AND MULTI DEGREE FREEDOM SYSTEMS.
- DESIGN CONCEPT, SELECTION OF MATERIALS AND MANUFACTURING CONSIDERATIONS WHILE DESIGNING.
- COMPUTER AIDED DESIGN CONCEPTS AND APPLICATIONS
- DESIGN AND DRAWING OF FASTENERS AND CONNECTION AND POWER TRANSMISSION ELEMENTS.
- DESIGN AND DRAWING OF FRICTION CLUTCHES AND BRAKES.

### COURSE CONTENT

- UNIT I ENGINEERING DESIGN AND COMPUTER AIDED DESIGN.
- UNIT II COMPUTER AIDED DESIGN AND FINITE ELEMENT ANALYSIS.
- UNIT III TYPES OF LOADING AND DESIGN CRITERIA.
- UNIT IV JOINTS, SHAFTS AND COUPLINGS.
- UNIT V BELTS, FRICTION CLUTCHES AND BRAKES

### REFERENCE BOOKS

1. GOUTAM PRODHIT AND GOUTAM GHOSH, "MACHINE DRAWING WITH AUTOCAD", 1ST IMPRESSION, DORLING KINDERSLEY(INDIA) PVT., LTD., NEW DELHI, 2007/1ST
  2. J.E.SHIGLEY, "MECHANICAL ENGINEERING DESIGN", 1ST METRIC EDITION, MCGRAW-HILL, NEW DELHI, 1986.
  3. SADHU SINGH, "COMPUTER AIDED DESIGN AND MANUFACTURING", KHANNA PUBLISHERS, NEW DELHI, 1998.
  4. DESAI Y.M., ELDOH.T.I. AND SHAH.A.H., "FINITE ELEMENT METHOD WITH APPLICATIONS IN ENGINEERING", 1ST ED., PEARSON, 2011
- REFERENCES:

### COURSE SOFTWARE

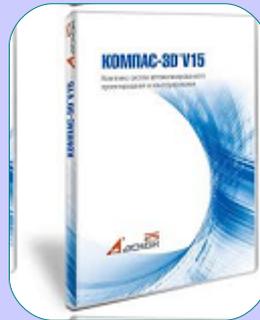
- ◆ APM WINMACHINE (MULTIPHYSICS)
- ◆ KOMPAS 2D/3D/PDM/BDM
- ◆ VARICAD 2D/3D/PDM/BDM
- ◆ UNIVERSAL MECHANISM(MBD).
- ◆ SAM (MECHANISM DESIGN)
- ◆ SALTIRE SOFTWARE
- ◆ DOCUMENTATION & PRINTING

### APM WINMACHINE

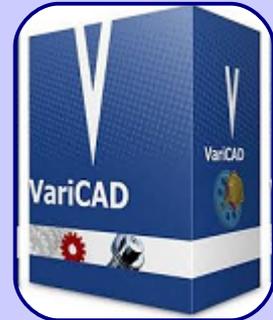
APM CAM/APM PLAIN/APM SCREW/APM STRUCTURE3D/APM DYNAMICS/APM BEAM/APM GRAPH/APM STUDIO  
APM DRIVE/APM TRANS/APM SHAFT/APM BEAR/APM JOINT/APM SPRING/APM BASE/APM MECHANICAL DATA/APM MATERIAL DATA/APM SECTION DATA/APM CONSTRUCTION DATA/APM BOOK



APM WINMACHINE



KOMPAS 3D



VARICAD

DESCRIPTION	ONLINE	TRAINING CENTRE	WEBINAR	REMARKS
COMPUTER AIDED MARINE ENGINEERING DESIGN AND 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