DEMAND

PAVIATH INTEGRATED SOLUTION

ENGG SPECIALIZED

MECHANICAL

COMPOSITE MATERIALS AND MECHANICS

Paviath ONLINE

◆ SYLLABUS PROGRAM ◆ COMPOSITE MATERIALS AND MECHANICS ◆ SPECIALIZED BRANCH

COURSE OUTCOME

UPON COMPLETION OF THIS COURSE, THE STUDENTS CAN
ABLE TO ANALYSE THE FIBER REINFORCED LAMINATE FOR OPTIMUM DESIGN
APPLY CLASSICAL LAMINATE THEORY TO STUDY AND ANALYSE THE RESIDUAL STRESSES IN LAMINATE.

REFERENCE BOOKS

1. GIBSON, R.F., "PRINCIPLES OF COMPOSITE MATERIAL MECHANICS", SECOND EDITION, MCGRAW-HILL, 1994,
CRC PRESS IN PROGRESS.
2. HYER, M.W., "STRESS ANALYSIS OF FIBER – REINFORCED COMPOSITE MATERIALS", MCGRAW- HILL, 1998

COURSE CONTENTS

UNIT I INTRODUCTION, LAMINA CONSTITUTIVE EQUATIONS & MANUFACTURING.
UNIT II FLAT PLATE LAMINATE CONSTITUTE EQUATIONS.
UNIT III LAMINA STRENGTH ANALYSIS.
UNIT IV THERMAL ANALYSIS.
UNIT V ANALYSIS OF LAMINATED FLAT PLATES.

COURSE OBJECTIVE

TO UNDERSTAND THE FUNDAMENTALS OF COMPOSITE MATERIAL STRENGTH AND ITS MECHANICAL BEHAVIOR
UNDERSTANDING THE ANALYSIS OF FIBER REINFORCED LAMINATE DESIGN FOR DIFFERENT COMBINATIONS OF PLIES WITH DIFFERENT ORIENTATIONS OF THE FIBER.
THERMO-MECHANICAL BEHAVIOR AND STUDY OF RESIDUAL STRESSES IN LAMINATES DURING PROCESSING.
IMPLEMENTATION OF CLASSICAL LAMINATE THEORY (CLT) TO STUDY AND ANALYSIS FOR RESIDUAL STRESSES IN AN ISOTROPIC LAYERED STRUCTURE SUCH AS ELECTRONIC CHIPS.

REFERENCE BOOKS

1. ISSAC M. DANIEL AND ORI ISHAI, "ENGINEERING MECHANICS OF COMPOSITE MATERIALS", OXFORD UNIVERSITY
PRESS-2006, FIRST INDIAN EDITION - 2007
2. MALLICK, P.K., FIBER, "REINFORCED COMPOSITES: MATERIALS, MANUFACTURING AND DESIGN", MANEEL
DEKKER INC, 1993.
3. HALPIN, J.C., "PRIMER ON COMPOSITE MATERIALS, ANALYSIS", TECHOMIC PUBLISHING CO., 1984.
4. AGARWAL, B.D., AND BROUTMAN L.J., "ANALYSIS AND PERFORMANCE OF FIBER COMPOSITES", JOHN WILEY
AND SONS, NEW YORK, 1990.
5. MALLICK, P.K. AND NEWMAN, S., (EDITION), "COMPOSITE MATERIALS TECHNOLOGY: PROCESSES AND
PROPERTIES", HANSEN PUBLISHER, Munish, 1990.

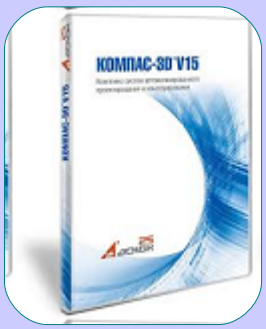
COURSE SOFTWARE

- ◆ 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

PRODUCTION ENGG	MECH & AUTOMATION ENGG	MECH ENGG (SANDWICH)	ROBOTICS AND AUTOMATION	MECHATRONICS ENGG
COMPOSITE MATERIALS AND MECHANICS				
SEMESTER VII ELECTIVE III				
ME6007				
DESCRIPTION	ONLINE	TRAINING CENTRE	WEBINAR	REMARKS
COMPOSITE MATERIALS AND MECHANICS	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