

CERTIFICATE PROGRAM

AUTOMOTIVE PRODUCT DESIGN IN COMPOSITE MATERIAL

PROGRAM OBJECTIVE

Knowledge of Composite Part Design Methodology, Aspects and Principles those influence for Composite Concept Design to launch for manufacturing of CFRP Products for Lightweight.

PREREQUISITIVE

Mechanical / Production or Automotive Engineering Graduate
<2 Year Experienced Professional
Basic working knowledge on any CAD & FEA Software Tool.

FEA LAB SESSIONS

Recorded Lab Sessions are provided based on learning methodology of ANSYS Composite PrepPost (ACP) to Composite laminates and simulate composite structures.

LEARNING OUTCOME

Design Principles, Rules and Methodology that involved to Design an Composite Product considering Customer specs, Raw Material combinations, Manufacturing feasibility and Regulations & Functional Requirements.

PROJECT LEARNING

During the Program, apart from classes, assignment are provided on how to design a composite product using CAD & FEA tool to analyze the product design performance, durability & specifications.

PROGRAM MODULE

100% online & classroom interactive session
Collaborative Skill-set gain with CAD & FEA practices.
Courses are in-line to actual Automotive Tier-1 /OEM Work Methodology.
Recorded lecture are provided for reference.

TRAINER PROFILE

M.Tech Automotive Engineering - BITS Pilani WILP.

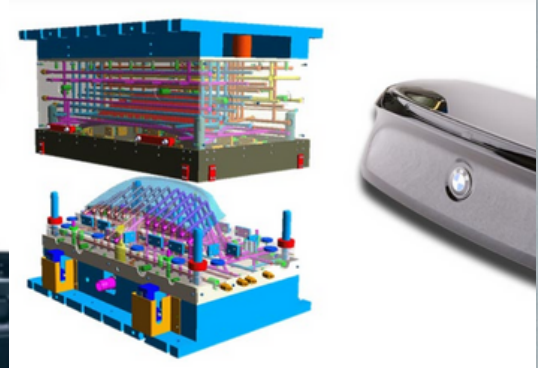
25 Years experienced professional in Automotive Industry & Technical Trainer.

Injection Tooling, CAD/CAM, Automotive Product Design, Engineering, Development and Validation.

CREDENTIAL

Recognition with **Certificate of Completion** will be facilitated at the end of the program. **Certificate of Internship Completion** are provided after successful completion of Internship Live Project.





INTRODUCTION TO COMPOSITES

COMPOSITES PRODUCT DESIGN

TOOL DESIGN & CHECKING GAUGE

MODULE-1

3 DAYS SESSION

CONTENT:

- Automotive Design Basics
- Composites Solutions
- Composites Design Benefits
- Automotive Applications
- Class A Surface Development
- Basics Design Thinking

MODULE-2

1 WEEK SESSION

CONTENT:

- Introduction to Composites
- Product Design Methodology
- Product Design Best Practices
- Design for Manufacturing
- Design for A-Class Painting
- DFMEA & DVP

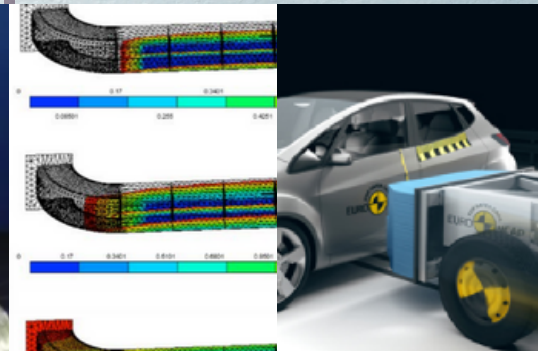
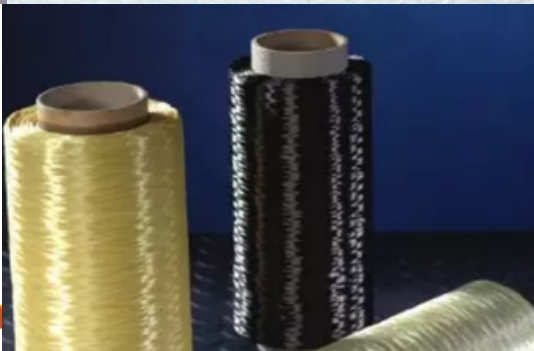
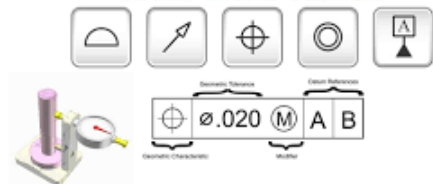
MODULE-3

3 DAYS SESSION

CONTENT:

- SMC & BMC Tool Design
- Product Mfg. Methods
- Intro to Checking Gauge
- Gauge Manufacturing
- Part Inspection Methodology

Geometric Dimension and Tolerance



GD&T, DFM, DFA

COMPOSITES MATERIALS

FEA & STRUCTURAL ANALYSIS

MODULE-4

4 DAYS SESSION

CONTENT:

- Introduction to GD&T
- GD&T on Product Design
- GD&T for Part Qualification
- DFM & DFA Methods
- DFMA influence on Product

MODULE-5

2 DAYS SESSION

CONTENT:

- Intro to Composite Materials
- Advanced Fibers
- Fiber Reinforced Composites
- Automotive Lightweighting
- Emerging Trend in Composites

MODULE-6

3 DAYS SESSION

CONTENT:

- FEA Lab Practise Session
- Basics Automotive Regulation
- Vehicle Test Regulations
- Mandatory Test Regulation
- EV Crash & Safety Aspects

Duration: 3.5 Weeks / Daily 1.5 Hours Online & Classroom Interactive Training + Project/Internship

Project: Post completion of the course, an project on **Body Panel Product Design** or **Semi Structural Under Bonnet Module Design** or **Pedestrian Safety EA Design** will be provided to gain Domain Expertise & Skill-set.