# CATIA V5 COMPOSITE PART ENGINEERING

**OBJECTIVE:** The students will be introduced to how to design simple Composites Parts using a Manual approach. Then learn how to use a Zone-based approach to complete the preliminary design and then the detail ed design. Users will learn the advance Grid based approach of composite modeling. They will also learn how to generate plies automatically, use the analysis tools and simulate fiber behaviour. Finally, the students will learn how to generate exact solids, create composites drawings, Import/ Export Ply data and create Ply Book.

| **DURATION**<br>5 Days | **STUDENT PROFILE**<br>CATIA V5 Composite Designers | **PRE-REQUISITES**<br>V5 Advanced Design |
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| TOPIC | DETAILS | DURATION |
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| **Introduction to Composites Design** | ▪ Getting Started with CATIA VS CPE<br>▪ Familiarizing with Composites Design approaches and terminologies<br>▪ Design using manual approach<br>▪ Create, modify and analyze the piles with manual approach | 1 DAY |
| **Creating Zone Based Design** | ▪ Design using Classic zone approach<br>▪ Design using Solid zone approach<br>▪ Create & Modify Piles with zone approach<br>▪ Create & Modify Piles using solid approach | .75 DAY |
| **Composite modeling using Grid Approach** | ▪ Understand the concept of Grid approach in Composites Design<br>▪ Defining composite parameter, Grid Panel and Virtual Stacking<br>▪ Generate plies using the Grid approach<br>▪ Modify the Ply geometry<br>▪ Create a solid or a top surface using the ply geometry<br>▪ Create and modify a composite part using the Composites Grid Design approach | 1.5 DAYS |

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| **Reviewing Composite Entities** | ▪ Getting Started with CATIA VS CPE<br>▪ Familiarizing with Composites Design approaches and terminologies<br>▪ Design using manual approach<br>▪ Create, modify and analyze the piles with manual approach | .5 DAY |
| **Generating Production Data** | ▪ Apply the manufacturing constraints like Producibility<br>▪ Generate a Manufacturing Stacking from an Engineering Stacking<br>▪ Synchronize the link between the Manufacturing and Engineering parts<br>▪ Creating Dart<br>▪ Create Multi-Splice and No-Splice on the Plies<br>▪ Compute Flattening | .75 DAY |
| **Creating Production Documents** | ▪ Exporting the Composite data & core samples results<br>▪ Create a drawing from design<br>▪ Create Ply book, review Ply table and perform inspections on design | .5 DAY |