

**Automotive Product Design & Analysis - APDA**  
**8 Days 80\* hours Intensive Certified Internship**  
**India's one and only New Product Design Internship**  
**Exclusively on**  
**Value Engineering Tools, Product Design and Computer Aided Engineering (CAE).**

### **Key Highlights of the Internship**

- Delivered by Industry Experts.
- Hands-on Learning Experience.
- Learn various tools and techniques used in Industries from Expert.
- Learn Product Design using CATIA & Product Analysis using ANSYS and Computational Fluid Dynamics (CFD) Using ANSYS ICEM CFD & FLUENT
- Work on Industry focused design and analysis Project
- Case study based Approach
- Micro Assignments.
- Career Development Session
- Get Industry Recognised Certification
- High Quality Curate E study materials for all participants.

### **Program Structure – First 15 Days – Expert-Led Live Sessions.**

#### **VALUE ENGINEERING TOOLS**

Product Design Process followed in Industry. Introduction to Value Engineering Tools

- SWOT
- QFD
- DFMA.

#### **PRODUCT DESIGN & DEVELOPMENT**

Introduction Unigraphics & CATIA and it's use cases in various Industries and User interface overview.

Parts Design tools and techniques in CATIA/UG (Hands-on)

Assembly Design tools and Techniques in CATIA/UG (Hands-on)

Surface design Tools and techniques in CATIA/UG (Hands-on)

**JOIN - INTERACT - LEARN - PRACTICE - BE INDUSTRY READY**

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## **MECHANICAL PRODUCT ANALYSIS**

Introduction to FEA & CAE

Hypermesh Pre-processing tools and techniques. (Hands-on)

Shell Meshing Concepts and 2D Shell Meshing and Topology Refinement. (Hands-on)

3D solid Meshing with Hexas, Pentas and Tetra & different tools and techniques.

Analysis Setup And loading, ANSYS - Solving and Post processing in FEA (Hands-on)

Hyper View - Post Processing for FEA & Report Generation. (Hands-on).

## **COMPUTATIONAL FLUID DYNAMICS (CFD) ANALYSIS**

Introduction to CFD, CFD Equations and Numerical Solution, Fundamentals of Finite Volume method.

Introduction to GUI of ICEM CFD, Geometry creation in ICEM CFD and Introduction to various meshing concepts (Hands-on)

Volume meshing process – Tetrahedral & Prism meshing in ICEM CFD (Hands-on)

User Interface of ANSYS FLUENT, Standard Practices followed in making ANSYS Simulation.

Solver Basics and Implementation of CFD projects & Turbulence modeling (Hands-on)

Boundary and Cell Zone conditions understanding the real life problem/scenario and Defining Boundaries in CFD. (Hands-on)

**Solver Mathematics and Post Processing:** To modify the mathematical algorithms to adjust accuracy and speed of a CFD solution & assure quality of CFD results and represent them in a realistic and informative manner. Project orientation and Industry Expectations, Interview Questions and preparation.

## TECHNOLOGIES & TOOLS YOU LEARN

CATIA  
ANSYS STRUCTURAL ANALYSIS  
ANSYS ICEM CFD & FLUENT

## Design Project/Challenge – 15 Days

Solution/Project presentation – Student will be assigned project individually or in a team they need to work on it and present the required deliverables to complete the program and get certification.

## Project presentation

- Best Teams will be selected and awarded “Winner of APDA Summer’21” with prizes.
- Best Students who perform well throughout the Program will get “Best Intern Award” and certificate of Excellence.
- Best Portfolio will be awarded Design Excellence Award.

**Note:** Expertshub has all rights to change the structure of the program based upon different conditions without prior notification to anybody.

All the students are requested to bring their own laptops with min 512 MB graphics card and latest configuration with good Mouse (Preferably 64 bit OS).

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