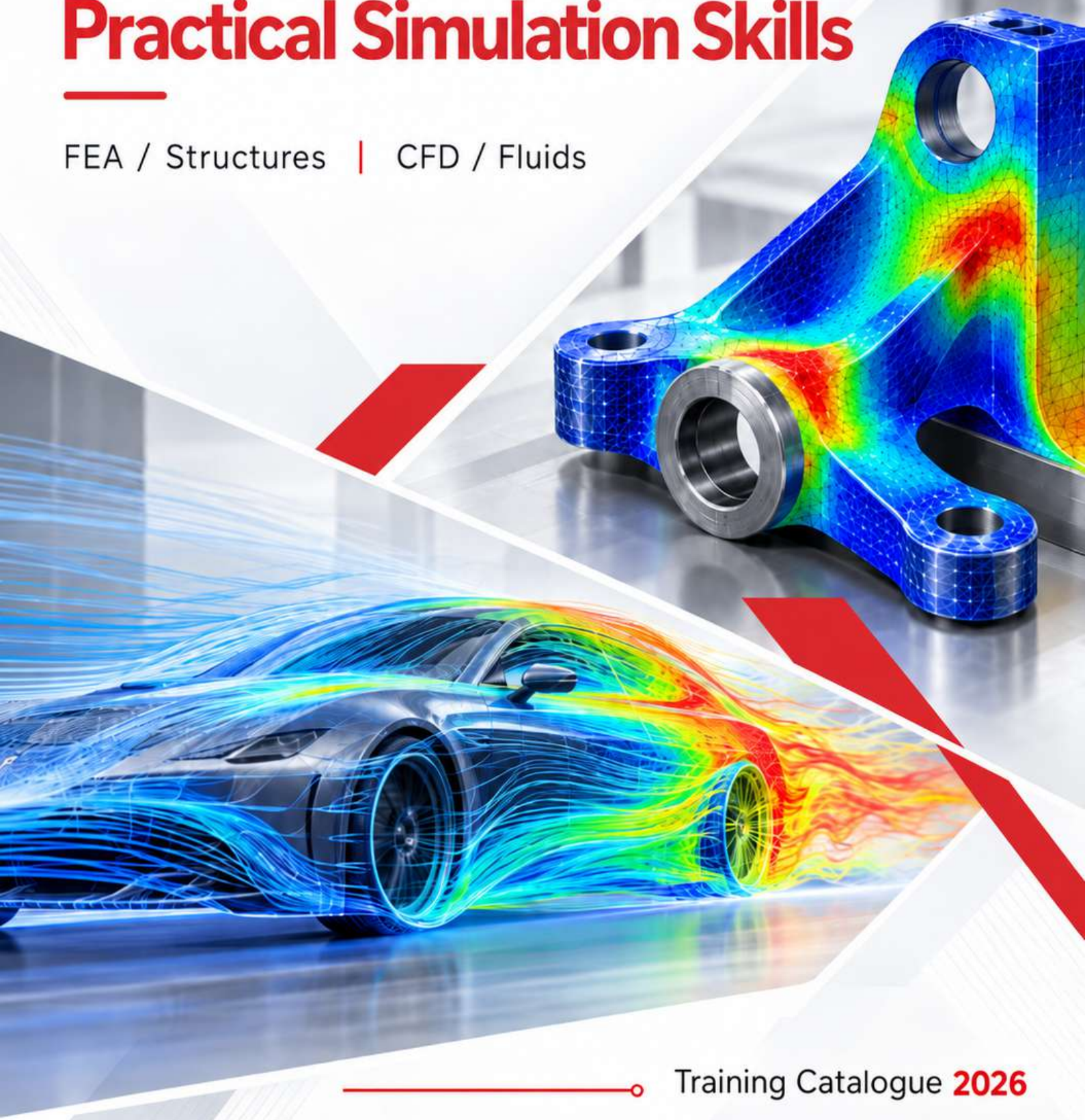
QANTUR TECHNOLOGIES
INNOVATION THROUGH SIMULATION

Structured Training for Practical Simulation Skills

FEA / Structures | CFD / Fluids



Training Catalogue **2026**

QANTUR TECHNOLOGIES
INNOVATION THROUGH SIMULATION

Training Pathway & Delivery Modes

Structured progression. Practical skills. Real-world impact.

Certification Pathway



Build foundations.



Strengthen applied skills.



Master advanced workflows.

Delivery Modes

INSTRUCTOR-LED TRAINING
Live, expert-led sessions.



SELF-PACED LEARNING
Learn anytime, anywhere.



CORPORATE WORKSHOPS
Tailored for your team.



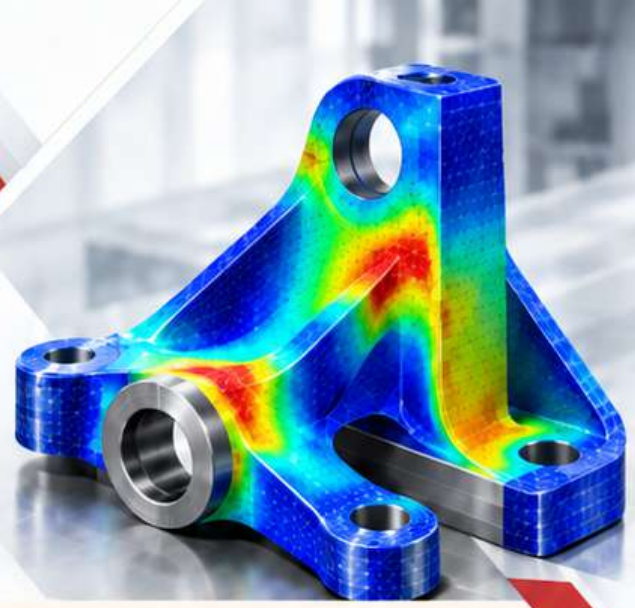
POST-TRAINING SUPPORT
Continued guidance for your success.



QANTUR TECHNOLOGIES
INNOVATION THROUGH SIMULATION

FEA / Structures Course Roadmap

Structured learning paths across basic, intermediate, and advanced simulation topics.



01 BASIC

Build core skills and foundational understanding of FEA and structural analysis.

- FEA Basic

02 INTERMEDIATE

Develop deeper expertise in structural simulation and real-world engineering applications.

- FEA Advanced
- Structural Nonlinearities

03 ADVANCED / SPECIALIST

Master specializzed topics and complex real-world simulation challenges.



- Explicit Dynamics
- Advanced Material Modelling
- Fatigue Analysis
- Acoustics
- Vibrational Analysis
- Rigid Body Dynamics
- Fracture Mechanics
- Thermal Analysis
- Composites
- Rotordynamics
- Motion
- Hydrodynamics
- Topology Optimization
- LS-DYNA

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CFD / Fluids Course Roadmap

Application-focused learning across basic, intermediate, and advanced fluid simulation topics.



01 BASIC

Build core CFD skills and understand fundamental fluid mechanics and simulation concepts.

- CFD (Basic)

02 INTERMEDIATE

Develop advanced CFD skills with in-depth simulation setup, meshing, and solution techniques.

- CFD (Advanced)
- Advanced Meshing

03 ADVANCED / SPECIALIST

Gain expertise in specialized CFD applications across complex, real-world engineering challenges.

- Fluid-Structure Interaction (FSI)
- Rocky-DEM
- Combustion Modelling
- Multi-Phase Flow Modelling
- Turbulence Modelling
- Rotatory Machinery
- Heat Transfer Modelling
- Aero-Acoustics
- Ansys Icepak
- Battery Modelling

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What Our Customers Say About Our Training

Reference-based feedback highlighting hands-on learning, trainer expertise and measurable engineering value.

P2P ANALYSIS® & SOLUTIONS
Solution with innovation

ANSYS Mechanical & LS-DYNA Training

"Their training programs are meticulously crafted, equipping our team with the skills and confidence to leverage ANSYS products to their full potential."

Also appreciated for strong technical support, training and commercial engagement.

KHATIB & ALAMI
ENGINEERING CONSULTANTS PRIVATE LIMITED

Advanced ANSYS CFD Training

"Advanced, in-depth training in ANSYS CFD helped equip our engineers with the technical proficiency required to maximize the capabilities of ANSYS solutions."

Supported by continuous application and project guidance.

KARMAN DRONES

FEA & CFD Training

"The extensive training sessions significantly improved our engineering team's proficiency in simulation techniques, including geometry implementation, meshing and modelling."

Helped enhance design and analysis processes.

FLOVEL
Advantage on your side

CFD Training for Hydro Turbomachinery

"The training enhanced our team's analytical skills in CFD simulation, helping us optimize hydro components for better performance."

Application-focused training for hydro turbine components.

ONASSIS AUTO LIMITED.

ANSYS Mechanical / FEA Training

"The team conducted online trainings for our engineering and R&D division, providing hands-on understanding of engineering mechanics, FEA, geometry, meshing and modelling."

Helped improve reliability, productivity and efficiency.

Common Outcomes Highlighted by Clients

- Hands-on learning
- Improved analytical skills
- Practical geometry, meshing & modelling
- Better utilization of ANSYS tools
- Stronger engineering confidence

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More Training Success Stories

Selected feedback from reference letters highlighting hands-on learning, trainer expertise, and practical engineering value.

CUET Bangladesh

5-Day FEA & CFD Training

"A five-day training program covering hands-on implementation of geometry, meshing and modelling techniques that will definitely enhance analytical skills."

Participants appreciated the trainers for patiently addressing their queries.

entecnia

15-Day FEA Training Program

"An exclusive 15-day training program provided hands-on detail in geometry, meshing and modelling techniques to enhance the analytical skills of our engineering team."

A strong example of long-duration structured corporate training.

Nicotra | Gebhardt

CFD Training

"The training provided hands-on understanding of geometry, meshing and modelling techniques, which will definitely enhance the analytical skills of our engineering and R&D team."

Also appreciated for flexible onsite and online delivery.

BENGAL INDUSTRIES PVT. LTD.

Advanced ANSYS Mechanical Training

"The advanced training was very informative and helped our team clear queries related to contact modelling, meshing and fatigue problems."

Praised for smooth delivery and patient query handling.

S&O MARITIME

ANSYS Mechanical Pro Training

"The training was very informative and provided hands-on details regarding implementation techniques which will definitely enhance analytical skills."

The sessions were conducted smoothly according to schedule.

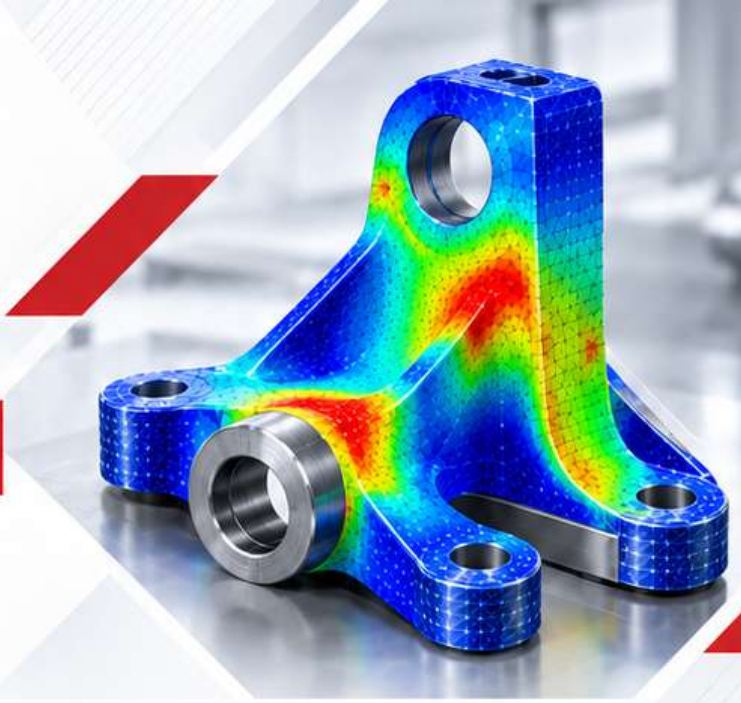
Why Organizations Recommend Our Training

- Expert trainers
- Hands-on practical sessions
- Application-focused learning
- Flexible delivery formats
- Supportive query resolution

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INNOVATION THROUGH SIMULATION

FEA Basic Areas Covered

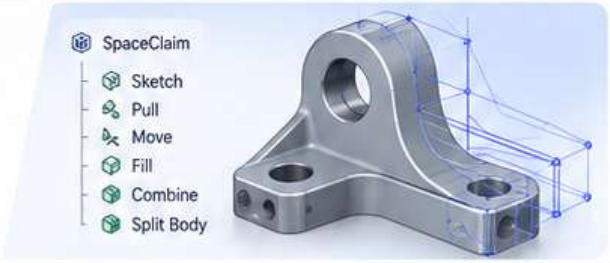
Build strong fundamentals in structural simulation using ANSYS Mechanical.



MODULE 01

Geometry Preparation

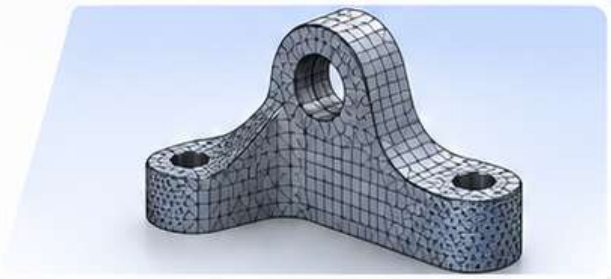
- Getting Started with SpaceClaim
- Geometry Repair
- Preparing for Ansys Mechanical
- SpaceClaim to Workbench



MODULE 02

Ansys Workbench Meshing Software for FEA

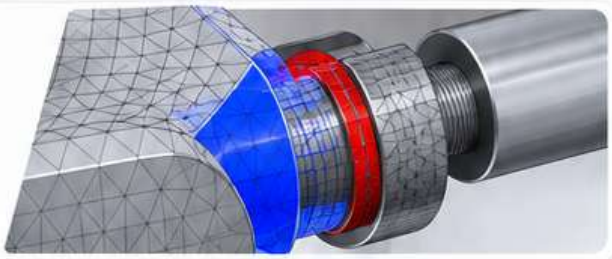
- Basics
- Local Mesh Controls
- Global Mesh Controls
- Quality Diagnostics



MODULE 03

Connections

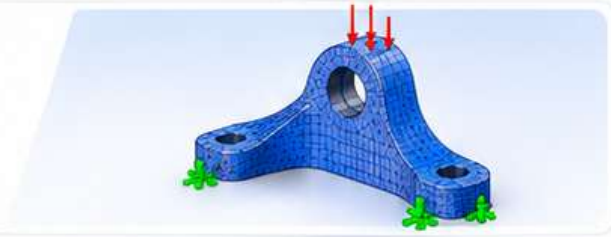
- Types of Contacts
- Contact Tool
- Contact Formulations
- Connection Setup



MODULE 04

Physics Set-up

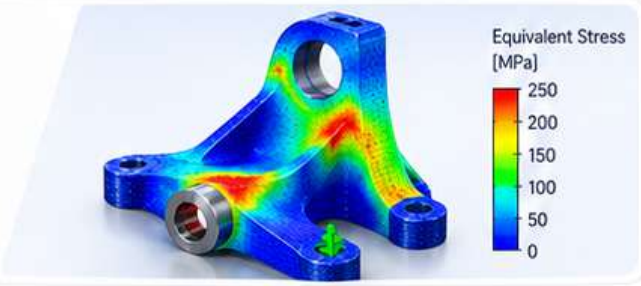
- Analysis Setting
- Boundary Conditions



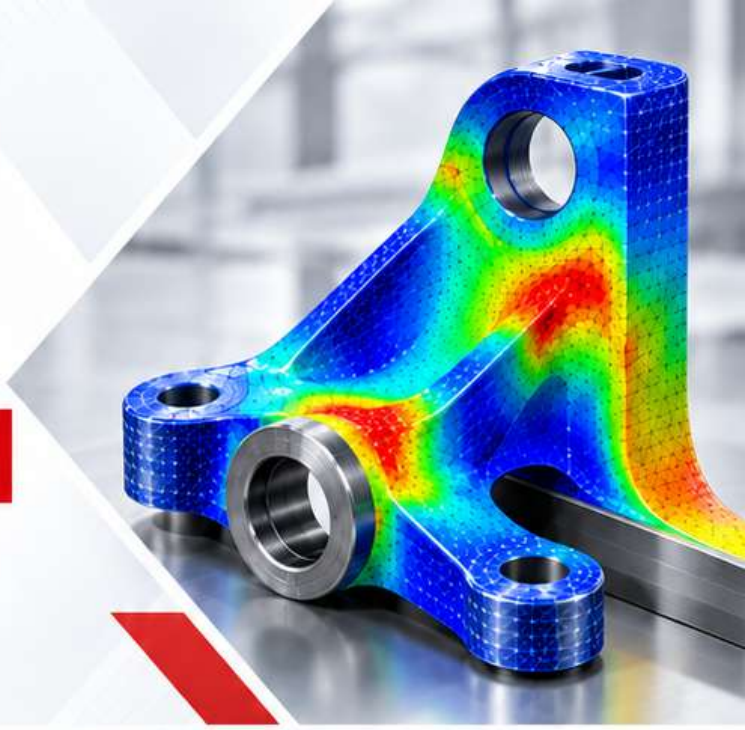
MODULE 05

Post-Processing

- Results definition and scoping
- Animation
- Contour adjustments
- Probe Tool
- Report generation



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FEA Standard Areas Covered

Develop applied capability for nonlinear, dynamic and durability simulations.

MODULE 01

Nonlinear FEA Fundamentals

- Types of nonlinearities—geometric, material, contact
- Load stepping and convergence behavior
- Newton-Raphson method
- Stabilization techniques
- Restart and solution controls

MODULE 02

Advanced Contact & Connections

- Contact formulations and interface behavior
- Frictional vs frictionless contact
- Bolt pretension techniques
- Gasket and sealing simulations
- Specialized connections—beams, springs, joints, bearings

MODULE 03

Nonlinear Materials for Metals

- Plasticity models
- Creep behavior
- Advanced Metal Models

MODULE 04

Transient Analysis

- Fundamentals of dynamic response
- Overview of dynamic analysis types
- Transient structural analysis setup
- Time stepping and numerical stability
- Initial condition definition
- Load vs time functions

MODULE 05

Fatigue & Durability Analysis

- Fundamentals of fatigue
- Stress-life (S-N) approach
- Strain-life approach
- Fatigue life prediction
- Low-cycle and high-cycle fatigue
- Mean stress correction methods
- Damage accumulation concepts
- Fatigue workflow in ANSYS Mechanical

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FEA Advanced Specialized Areas Covered



Customized, module-based training for specific engineering domains and high-end simulation requirements. Participants can select one or multiple modules based on application areas and project needs.

Training Modules

Explicit Dynamics
High-speed impact, crash, drop, and failure simulations.

LS-DYNA
Advanced nonlinear explicit simulations for extreme loading conditions.

Rigid Body Dynamics
Mechanism behavior, motion-driven systems, and kinematic studies.

Acoustics
Noise prediction, sound propagation, and acoustic performance analysis.

Vibration Analysis
Modal, harmonic, and random vibration studies.

Thermal Analysis
Steady-state and transient thermal simulations with coupling possibilities.

Composites
Layered material modeling, failure criteria, and anisotropic behavior.

Rotordynamics
Shaft dynamics, critical speeds, and stability analysis.

Hydrodynamics
Fluid-structure interaction and flow-induced effects.

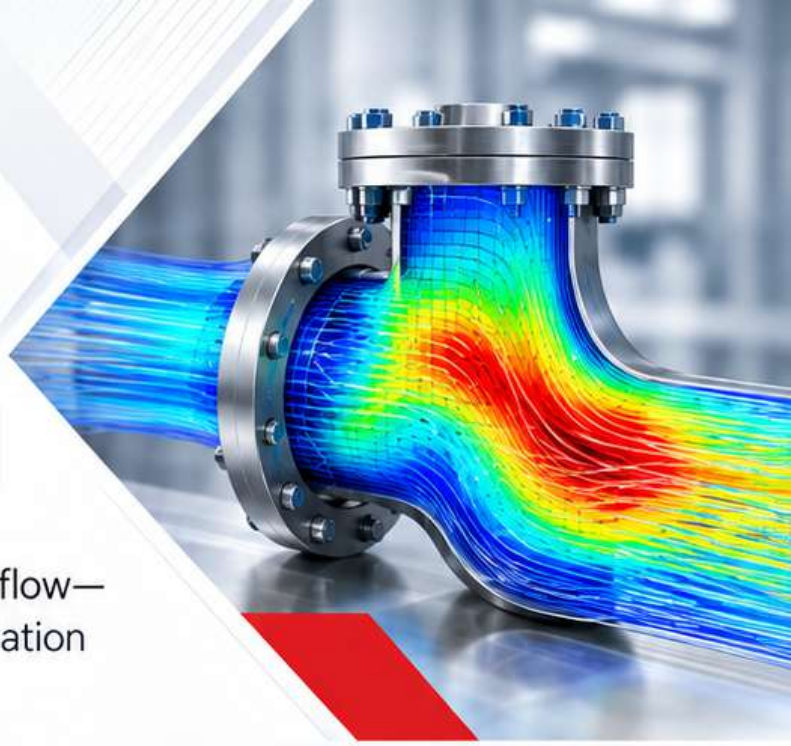
Topology Optimization
Design optimization for weight reduction and performance improvement.

Motion (Multibody Dynamics)
System-level motion simulation with joint and load interactions.

Key Features of Advanced Training

- Fully customizable as per application or industry.
- Focus on real project use-cases.
- Deep-dive into solver-specific techniques.
- Can be delivered as standalone modules or bundled programs.

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CFD Basic Areas Covered

Build a complete foundation in CFD workflow—from geometry preparation through simulation and result interpretation.

01 Introduction

- Overview of CFD fundamentals
- ANSYS Fluent capabilities
- Problem statement definition



02 CAD Preparation for CFD using SpaceClaim

- Geometry imports and creation
- Geometry repair and defeaturing
- Preparing CAD models for CFD analysis



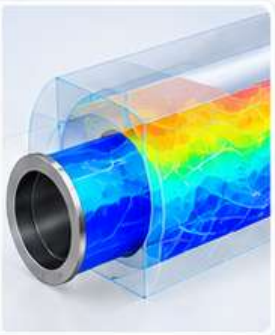
03 Meshing

- Meshing techniques and element types
- Structured vs. unstructured meshes
- Inflation layers and mesh refinement
- Mesh quality assessment



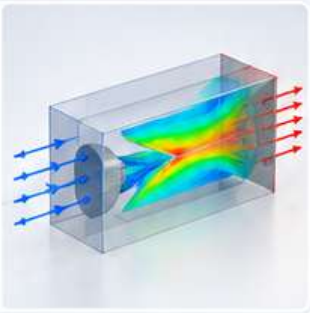
04 Material Modelling

- Defining material properties
- Assigning materials to domains



05 Physics Setup

- Boundary and initial conditions
- Cell zone conditions and configurations
- Solver settings and convergence control



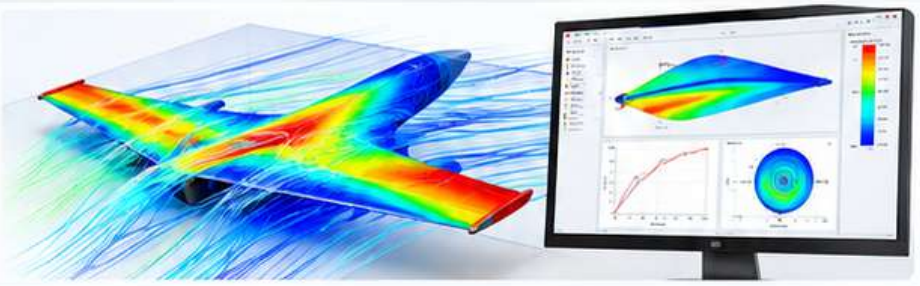
06 Simulation

- Running steady and transient simulations
- Laminar and turbulent flow modeling
- Heat transfer and multiphase simulations



07 Post-Processing

- Result visualization and interpretation
- Contours, vectors, and plots
- Report generation
- Post-processing using CFD-Post



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CFD Standard Areas Covered

Advance from fundamental CFD workflows to higher-quality meshing, turbulence modelling and engineering studies.



MODULE 01

Advanced Meshing Techniques

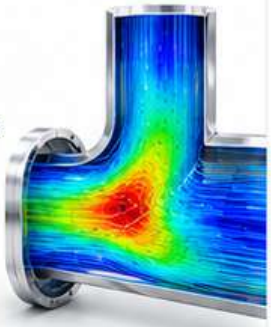
- High-quality meshing methods
- Boundary layer meshing
- Mesh independence studies
- Mesh quality metrics and evaluation



MODULE 02

Internal / External Flow Simulations

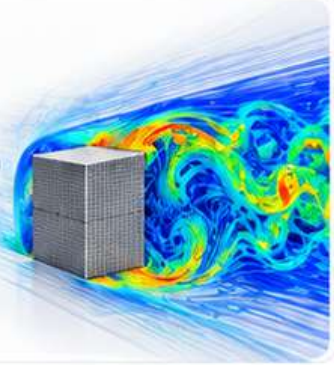
- Setup for internal and external flows
- Fluid flow analysis within internal piping
- Pressure drop and flow distribution
- Analysis of various flow scenarios



MODULE 03

Turbulence Modeling

- Model selection (k-ε, k-ω SST)
- Near-wall treatment (y+)
- Impact on engineering flow systems



MODULE 04

Optimization & Parametric Studies

- Parametric design studies
- Sensitivity analysis



Application-focused training for practical engineering flow analysis.

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CFD Advanced Specialized Areas Covered



Specialist CFD training for complex physics, coupled simulation, and demanding industrial applications.

Heat Transfer
Conduction, convection, and radiation.

Multiphase Flow
Eulerian and Volume of Fluid (VOF) models.

Turbulence & Advanced Flow Modelling
Advanced turbulence models such as LES and RSM.

Particle Tracking
Discrete Phase Modeling (DPM).

Aero acoustic Modelling
Effect of flow on the sound levels.

Fluid-Structure Interaction (FSI)
Interaction between fluid flow and structural response.

Key Features of Advanced Training

- Fully customizable based on industrial operations and challenges.
- Focus on real industrial case studies.
- Deep-dive into advanced physics and solver techniques in ANSYS.
- Can be delivered as specialist modules or bundled programs.

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Contact Us

Connect with Qantur Technologies for training enquiries, corporate programs, and custom learning pathways.

Training Enquiries
Course information, schedules, and learning guidance.

Corporate Workshops
Customized training for teams and organizations.

Consulting & Custom Programs
Application-focused learning aligned to your engineering needs.

Post-Training Support
Extended guidance beyond the classroom.

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