INVENTATEQ

MASTER ASPEN HYSYS

COURSE With Placement

Build In-Demand Professional Expertise with Real-Time Hands-on Aspen Hysys Training

Live Online | Self-paced | Classroom

COURSE MODULES

- Process Simulation Fundamentals
- Thermodynamics and Physical Properties
- Unit Operations Modeling
- Advanced Process Simulation Techniques
- Real-time Projects and Industry Applications
- 100% Hands-on Practical Sessions Support in CAREER Guidance

10+	500+	25K	10K
Years of Experience	Hours of Training	Learners Worldwide	Hours of Training

Limited Time Offer
Flat 50% Discount
Use Code: INVENTATEQ50
LIMITED SEATS!

STARTS HERE !

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ARE YOU FACING THESE CHALLENGES ?

- Still researching how to find a reliable organization?
- Worried about the Cost Vs Value Proposition for each course selection?
- Stuck in course selling and IT and wasting the further time and opportunities?
- Tired of Getting Fake IT Training Reviews and Misleading Information?
- Struggling with Interviews with industry experts for Projects?

Move Forward Along Perfect You

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ABOUT INVENTATEQ

Inventateq is a leading IT training and placement company committed to transforming learners into industry-ready professionals.

Our Mission

Our Vision

Why Thousands Choose Inventateq?

10+	500+	25,000+	10,000+
Years of Experience	Hours of Training	Learners Worldwide	Hours of Training

We Collaborate With

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WHY LEARN ASPEN HYSYS ?

Aspen HYSYS is a powerful process simulation tool used in the chemical, petroleum, and energy industries to design, optimize, and analyze complex processes.

CAREER SCOPE AFTER COURSE

- Process Engineer
- Process Design Engineer
- Petroleum Engineer
- Chemical Engineer
- Simulation Engineer
- Process Plant Operations Engineer
- Research and Development Engineer
- Graduate Engineer Trainee Program
- Consultant

Process Simulation Fundamentals

Thermodynamics and Physical Properties

Unit Operations Modeling

Advanced Process Simulation Techniques

Real-time Projects and Industry Applications

Workshops

CERTIFICATE

Certificate of Completion

Aspen HYSYS

Course Completion & Placement Assistance Provided. Accredited & Industry Recognized.

Average Fresher Salary Package in India in India

₹5.0 LPA - ₹14.0 LPA

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WHY INVENTATEQ ?

What you learn, how you learn, and how much support you get when you are stuck!

STUDENT SUCCESSES

- 100% Real-Time Hands-on Training Sessions
- 100% Placement Assistance Till You Get Placed
- Industry Real-Time Projects Implementation
- Unlimited Interview Calls & Mock Tests

COURSE & PLACEMENT VIDEOS

Student Success Stories

Practical Training Sessions

Placement Drives

Interview Q&A & Results

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GUARANTEED PLACEMENT SUPPORT

We don't just teach, we prepare you for the real world!

- Aptitude Training
- Soft Skills Training
- Mock Interviews
- Personalized Preparation
- Resume Preparation
- Interview Scheduling
- Industry Mock Interviews
- Job Portal Access
- Placement Drives & Assistance

OUR PLACEMENT PARTNERS

OUR PLACEMENT STATS

10,000+	500+	95%	4 LPA
Students Placed	Hiring Partners	Placement Rate	Highest Package

Check Our Recent Placed Students

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CAREER PROGRESSION

ROLE/STAGE	TYPICAL RESPONSIBILITIES	SKILLS NEEDED
Process Engineer / Graduate Engineer	Process monitoring, basic plant operations, troubleshooting, data analysis, reporting	Understanding of process flow diagrams, basic thermodynamics, safety and environmental awareness
Senior Process Engineer	Leading process improvement projects, mentoring junior engineers, optimizing plant performance	Advanced process control, project management, leadership, cost optimization
Process Design Engineer	Designing new processes, developing process flow diagrams, sizing equipment, preparing design documents	Process simulation software, engineering design principles, technical drawing, reports
Process Optimization Engineer	Analyzing plant data, identifying inefficiencies, implementing improvements, reducing costs	Statistical analysis, data mining, process control, energy management
Process Safety Engineer	Conducting hazard analysis, developing safety protocols, ensuring regulatory compliance	Risk assessment, safety engineering, regulatory knowledge, emergency response planning
Plant Manager / Operations Manager	Overseeing entire plant operations, managing budgets, ensuring safety and production targets	Leadership, strategic planning, financial management, operations management

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SKILLS ROADMAP

Progress from core foundations to specialized and cross-industry transferable skills.

SKILL TYPE	FOCUS AREAS
Process Engineering Skills	Process Simulation (Aspen HYSYS), Thermodynamics, Fluid Mechanics, Heat Transfer, Mass Transfer, Reaction Engineering, Separation Processes, Process Control, Plant Design, Safety & Risk Management
Mechanical Engineering Skills	Mechanical Design Fundamentals, Pressure Vessel Design, Piping Design, Rotating Equipment, Heat Exchanger Design, Material Selection, Corrosion Engineering
Electrical & Instrumentation Skills	Electrical Fundamentals, Power Systems, Instrumentation & Control Systems, PLC & SCADA, Sensors & Transmitters, Control Valves, Loop Tuning
Chemical Engineering Skills	Chemical Reaction Engineering, Catalysis, Polymer Engineering, Petrochemical Processes, Refinery Processes, Gas Processing, Water Treatment, Environmental Engineering
Project Management Skills	Project Planning & Scheduling, Cost Estimation, Risk Management, Procurement, Construction Management, Commissioning & Start-up, Project Documentation
Software & Digital Skills	Aspen HYSYS, AutoCAD, MATLAB, Python for Engineering, Data Analytics, Machine Learning Basics, Digital Twin Concepts, Industry 4.0 Tools
Soft Skills & Professional Skills	Communication Skills, Technical Report Writing, Presentation Skills, Teamwork & Collaboration, Problem Solving, Leadership, Time Management, Ethics & Professionalism

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DETAILED MODULE PLAN

Master Aspen Hysys: A Practical Course in Theory and Hands-on Training

Module 1: Process Simulation

- Foundations
- Overview of the applications in chemical and process industries
- The Aspen HYSYS program interface
- Introduction to simulation basis manager, fluid packages, and property methods
- Understanding streams, basic unit operations (mixing and process representation)
- Material and energy balance calculations

Activity Lab
Simulating a simple process flow sheet using mixer and separator and analyzing the results.

Activity Lab
Simulating a simple process flow sheet using mixer and separator and analyzing the results.

Module 2: Aspen HYSYS Interface and Case Setup

- Creating a new case, selecting components, and assigning properties files
- Configuring simulation environments for different process types
- Navigating the workbook, PFD, and property environments

Activity Lab
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Module 3: Thermodynamics and Fluid Packages

- Role of thermodynamics in process simulation
- Selecting fluid packages based on system
- Peng-Robinson, SRK, NRTL, and other property methods
- Handling non-ideal systems, electrolytes, and petroleum systems
- Error messages, how to debug them

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Module 4: Material and Energy

- Streams
- Defining feed conditions, composition, pressure, temperature, and flow rates
- Material stream specifications
- Utility streams
- Energy streams for heating, cooling, compression, and expansion
- Heat and work integration concepts

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Module 5: Unit Operations – Core Equipment

- Heating, cooling, and heat exchangers (shell & tube, plate, air coolers)
- Understanding pressure drop and heat transfer calculations
- Separation equipment: flash drums, distillation columns, absorbers, strippers
- Condensing and vaporization equipment with utility integration

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Module 6: Columns and Advanced Separation Awareness

- Distillation: column internals and equipment, process simulation basics
- Absorbers, strippers, and extractors
- Reactors: conversion and equilibrium
- Pumps and compressors
- Valves and pressure reducing devices
- Pipe segments design theory for efficiency comparison and capacity

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Module 7: Reactions and Reactor Modeling

- Reaction stoichiometry, conversion, and yield
- Specifications: conversion, component balance
- Reactor types: conversion reactor, equilibrium reactor, and kinetic reactor
- Heat effects: adiabatic, isothermal, and specified duty and reactor volume/performance

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Activity Lab
Simulating a simple process flow sheet using mixer and separator and analyzing the results.

Module 8: Columns and Advanced Separation Awareness

- Distillation: column internals and equipment, process simulation basics
- Absorbers, strippers, and extractors
- Reactors: conversion and equilibrium
- Pumps and compressors
- Valves and pressure reducing devices
- Pipe segments design theory for efficiency comparison and capacity

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Module 9: Utilities, Recycles, and Convergence

- Managing recycle streams, design specs, and tolerance
- Convergence methods: direct substitution, Wegstein, Newton
- Troubleshooting convergence problems and diagnostic tools
- Building reliable simulations for real-world process flows

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Module 9: Optimization and

- Engineering mini-project
- Defining objectives, constraints, ranges, and optimization parameters
- Setting and running optimization in Aspen HYSYS
- Using PETROX Assistant to support efficiency, capacity, and energy decisions
- Sensitivity analysis: studying variable impacts on performance
- Cases: Opportunities

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Module 10: Real-Project Workflow

- Building a realistic plant simulation from feed to product streams
- Applying all learned concepts to a complete process flow sheet
- Preparing presentation-ready results, documentation, and engineering reports
- Capstone project: Design, simulate, and optimize a chemical process
- Process Engineer Resume

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REAL-WORLD PORTFOLIO PROJECTS

Practical Projects to Build Your Skills and Showcase Your Expertise

Project 1: Process Flow Diagram

Objective: Develop and interpret process flow diagrams (PFDs) to understand plant operations.

Skills Gained: Process flow diagram interpretation, equipment identification, stream analysis.

Tools Used: Aspen HYSYS, Microsoft Visio, AutoCAD.

Project Outcome: Create and analyze a PFD for a simple chemical process.

Project 2: Simulation Engineer

Objective: Develop and interpret process flow diagrams (PFDs) to understand plant operations.

Skills Gained: Process flow diagram interpretation, equipment identification, stream analysis.

Tools Used: Aspen HYSYS, Microsoft Visio, AutoCAD.

Project Outcome: Create and analyze a PFD for a simple chemical process.

Project 3: Chemical Process Analyst

Objective: Develop and interpret process flow diagrams (PFDs) to understand plant operations.

Skills Gained: Process flow diagram interpretation, equipment identification, stream analysis.

Tools Used: Aspen HYSYS, Microsoft Visio, AutoCAD.

Project Outcome: Create and analyze a PFD for a simple chemical process.

Project 4: Plant Operations Support Engineer

Objective: Develop and interpret process flow diagrams (PFDs) to understand plant operations.

Skills Gained: Process flow diagram interpretation, equipment identification, stream analysis.

Tools Used: Aspen HYSYS, Microsoft Visio, AutoCAD.

Project Outcome: Create and analyze a PFD for a simple chemical process.

Project 5: Aspen Hysys Role- to- Real Experience

Objective: Develop and interpret process flow diagrams (PFDs) to understand plant operations.

Skills Gained: Process flow diagram interpretation, equipment identification, stream analysis.

Tools Used: Aspen HYSYS, Microsoft Visio, AutoCAD.

Project Outcome: Create and analyze a PFD for a simple chemical process.

Project 6 is designed to provide practical experience in applying engineering principles to real-world scenarios.

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ASSESSMENT FRAMEWORK

How We Evaluate Your Progress and Ensure Your Success

ASSESSMENT	ASSESSMENT FOCUS	WHEN CONDUCTED
Quizzes	Knowledge checks on theory, terminology, and basic concepts	After each module
Unit Assessment & Practical Exercises	Application of concepts, problem-solving, and hands-on skills	At the end of each unit
Mid-Course Assessment	Comprehensive evaluation of learning progress and skills	Midway through the course
Final Evaluation Test	End-to-end process design, troubleshooting, and optimization	Upon course completion
Technical Project Viva	Technical knowledge, troubleshooting, and problem-solving skills	Successful fulfillment of assignment requirements

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RESUME, GITHUB & LINKEDIN

Build a Strong Professional Presence to Showcase Your Skills

- Resume Creation: Highlight your skills, projects, and achievements effectively.
- Optimized Resume Keywords: Increase visibility to recruiters and hiring managers.
- GitHub Setup & Portfolio Development: Showcase your projects and coding skills.
- Project Documentation Guidance: Present your work professionally.
- LinkedIn Profile Optimization: Build a strong professional network.
- Networking Strategies: Connect with industry professionals and recruiters.

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OUR STUDENT

Hear from our students about their journey, challenges, and the success they achieved through dedication, skill, and guidance.

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WATCH VIDEOS

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JOB HUNTING ENDS HERE

Start your career with support that gets you your Dream Job!