



THE CHEMICAL ENGINEERING MAJOR

**Process Dynamic Simulation for Process,
Equipment's and Instrumentation Using HYSYS
Software (Dynamic)**

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Process Dynamic Simulation for Process, Equipment's and Instrumentation Using HYSYS Software (Dynamic)

Who Should Attend?

Engineers familiar with computer software.

Methodology:

This interactive Training will be highly interactive, with opportunities to advance your opinions and ideas and will include;

- Lectures
- Workshop & Work Presentation
- Case Studies and Practical Exercise
- Videos and General Discussions

Certificate:

BTS attendance certificate will be issued to all attendees completing minimum of 80% of the total course duration.

Objectives:

An advanced course to develop the engineers how to simulate in dynamic mode (real mode) for a process, equipment's and instrumentation using Aspen HYSYS software for chemical, petrochemicals, oil, and gas applications to achieve an optimum and real operation virtually.

Contents:

- Getting Started in Steady State, Define a fluid package (property package, components), Add streams and operations.
- Basic Control Theory, Learn the basics of process control theory, Develop control strategies, Examine general guidelines for implementing appropriate control strategies.
- Pressure Flow Theory, Concept of dynamic simulation in Aspen HYSYS Dynamics, Learn dynamic pressure flow specifications.
- Transitioning from Steady State to Dynamics, Size equipment, Define pressure flow specifications, Add strip charts and controllers, Run a simple dynamic simulation and observe the role of the various controllers.
- Column Dynamics, Configure a distillation column, prepare the column for dynamic simulation, Develop a control strategy.
- Expanding the Column, Overhead System, Add operations and controllers in dynamic mode, Replace the standard condenser unit

operation with a detailed overhead system, Make necessary P/F specs for the overhead system, Implement appropriate control strategies.

- Column Pressure Relief, Install a relief valve.
- The Event Scheduler and Spreadsheet, Use the Event Scheduler manager, Create Event Schedules, Build Sequences, Create event conditions.
- Oil Refinery dynamic simulation.
- Compressor surge control system.
- TEG Dehydration Tower, Configure a distillation column Prepare the column for dynamic simulation, Develop a control strategy.
- Reaction dynamic control for Propylene Glycol and ammonia plants.