

2-days AFT Fathom Onsite Tutorial Training

Duration: 9:00 am - 6:00 pm 1 hour lunch break Min 4 pax to start an onsite privacy training course

Focus:

To provide an immediate experience with hydraulic pipeflow solutions by using AFT Fathom. It is primarily for people who are interested in starting up with Fathom now but have little or no experience with the Fathom. Tutorials will be started from introduction to AFT solutions and hydraulic solution methodology with selcted examples. After these examples, you may select examples that most closely matches your applications. The examples are arranged in order of increasing complexity.

Prerequisites:

- Basic literate in Windows 98 or Win ME or Win2000 or semilar.
- Basic understanding in fluid dynamic, thermodynamic and heat transfer.

Agenda:

INTRODUCTION

- F1. Overview of AFT Fathom
- F2. Hydraulic Solution Methodology
- F3. Demonstration Problem Sizing a Pump
- F4. Understanding Solution Control Options
- F5. AFT Fathom Hands-On Modeling
- F6. Troubleshooting AFT Fathom Models
- F7. Pipe and Junction Details
- F8. Using the Scenario Manager
- F9. Customizing Fathom and Using Databases
- F10. Special Topics
- F11. More AFT Fathom Hands-On Modeling

Selective Hand On Tutorials:

1) Three-reservoir Example: In-depth discussion of model building in AFT Fathom. Solves a classic three reservoir flow problem.



Advance Software Solutions Centre Pte Ltd

- Specializing in Computer Aided Software Applications, Trainings & Consultancy
 2) Sizing a Pump: This example will walk you through a simple calculation to size a pump to transfer water from one reservoir up a hill to another reservoir. For this problem, we will determine the pump head requirements to maintain a desired flow rate.
- 3) Control Valve: This example will walk you through a simple calculation to calculate a pipe size for a control valve system. Water will be flowing from a reservoir on a hill down to another reservoir. The pipe must be sized correctly to allow 250 gpm flow with a pressure drop of 5 psi across the flow valve.
- 4) Heat Transfer: This example demonstrates how to calculate heat transfer in a pipe. For this example we will specify a mass flow rate and an inlet temperature and calculate the outlet temperature and total heat loss for a 100-foot section of pipe.
- 5) Heat Exchanger System: This example will walk you through a simple calculation to size a pump for a closed loop heat exchanger system. First we will build the system with an assigned flow pump and then enter a real pump that meets these requirements.
- 6) Crude Oil Pipeline: The objective of this example is to model a pipeline system to investigate the effects of a viscous fluid.
- 7) Spray Discharge: The objective of this example is to find the minimum supply pressure needed to supply a system of eight spray discharge heads with at least 100 gal/min to each spray head.
- 8) Pump Selection with FCV: This example will demonstrate how to select pumps and control valves. The system will pump water from a supply tank at one elevation and pressure to a receiving tank at a higher elevation and pressure. There will be two flow control valves operating in parallel.
- 9) Freon System with HT: This example will model a freon delivery system to supply freon at 75 F. As the engineer you will evaluate three candidate refrigerants (Refrigerant 11, 12 and 13) to determine the best choice. We will also calculate the temperature of the hot water supply needed for the heat exchangers.
- 10) Cooling System: The objective of this example is to determine how much flow will be delivered to the heat exchangers in the system. A secondary objective is to determine the best pump for the system.
- 11) Hot Water System: The objective of this example is to select the best pump configuration for a hot water system. This example with demonstrate the Scenario Manager and with show how to manage multiple pump configurations.
- 12) Housing Project: This example with calculate the pipe sizes needed to supply a housing project with adequate water pressure under several conditions. We will investigate how to use the Scenario Manager to manage multiple requirements.