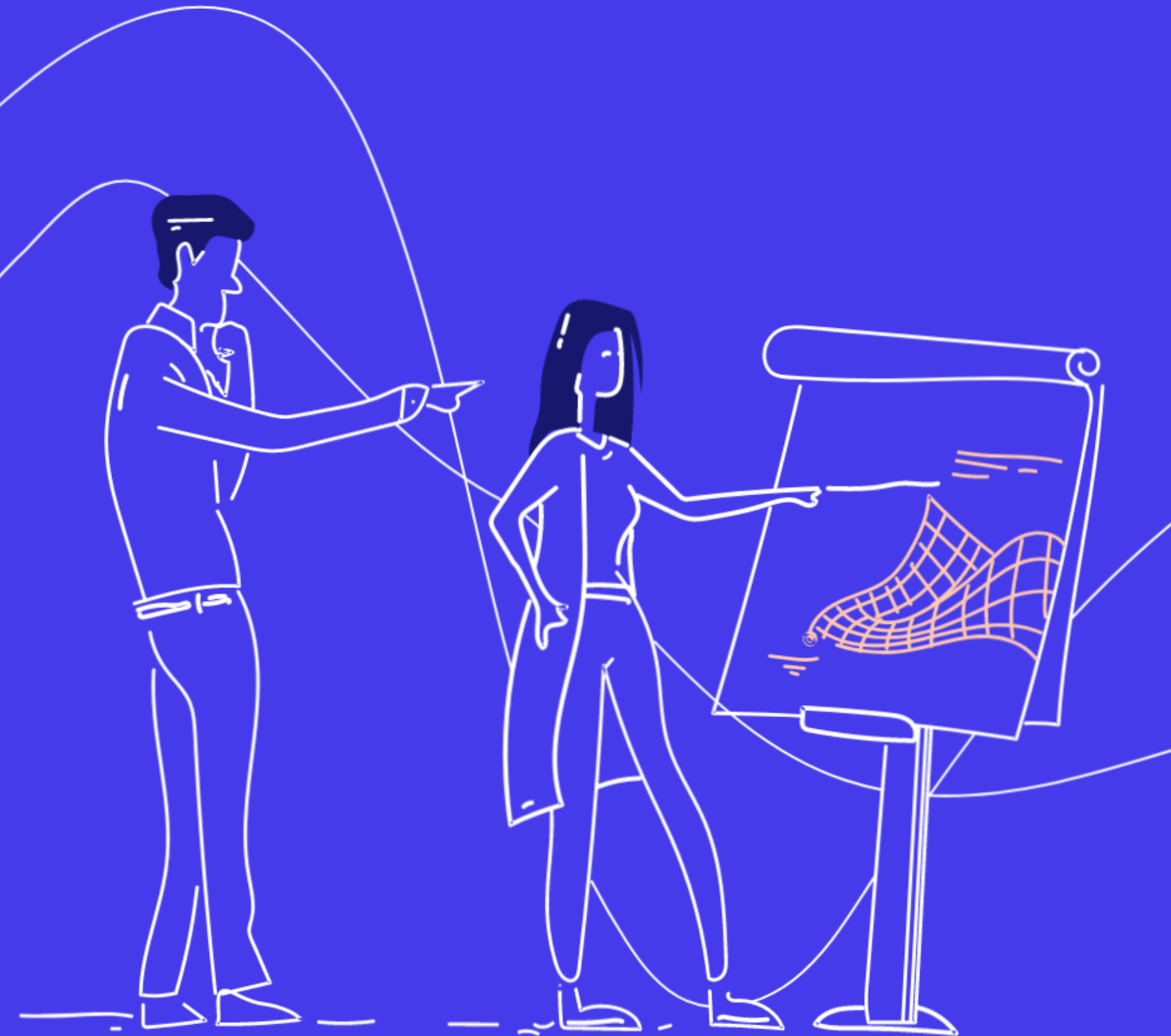




Modeling Fluid Systems with Simscape



SciEngineer's training courses are designed to help organizations and individuals close skills gaps, keep up-to-date with the industry-accepted best practices and achieve the greatest value from MathWorks® and COMSOL® Products.

Modeling Fluid Systems with Simscape

This one-day course focuses on modeling fluid systems in Simulink using Simscape Fluids. Topics discussed include modeling fluid power systems, actuating and controlling fluid system models, modeling thermal liquid and gas cooling systems and exchanging heat between fluid domains.

Prerequisites

MATLAB Fundamentals, Simulink Fundamentals, and Modeling Physical Systems with Simscape

DURATION	LEVEL
1 day	Medium
	

TOPICS

Day 1

- Hydromechanical Systems
- Hydraulic Actuation and Control
- Thermal Liquid Systems
- Gas Systems

Hydromechanical Systems

OBJECTIVE: Use Simscape and Simscape Fluids blocks to model the conversion between mechanical and hydraulic energy.

- Hydraulic modeling in Simscape
- Data logging and visualization
- Hydromechanical components
- Fluid dynamics and properties

Hydraulic Actuation and Control

OBJECTIVE: Model closed-loop fluid power systems controlled by valves and actuators.

- Valves in Simscape Fluids
- Feedback control with Simulink
- Accumulator control
- Model hierarchy and solvers

Thermal Liquid Systems

OBJECTIVE: Model a liquid cooling system accounting for thermal and elevation effects.

- Thermal liquid networks
- Thermal networks
- Heat exchangers
- Elevation effects
- Temperature control

Gas Systems

OBJECTIVE: Model a forced-air cooling system with ambient air ventilation.

- Gas networks
- Forced-air cooling
- Noncircular pipe flows
- Ventilation control
- System model integration



**Expand your
knowledge**

