Modeling Fluid Systems with Simscape

Prerequisites

MATLAB Fundamentals, *Simulink for System and Algorithm Modeling*, and*Modeling Physical Systems with Simscape*

Day 1 of 1	
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 fluid delivery systems that account for gravitational and thermal effects. Thermal liquid blocks Elevation in tanks and pipes Thermal networks Heat exchangers Temperature control
Custom Model Case Studies	**Objective:** Build custom fluid model components using fundamental blocks, equations, or data. Custom directional valve Empirical valve models Valve optimization Centrifugal pump parameterization Variable-efficiency motor