## AUTOMATION STUDIO<sup>™</sup> TRAINING – HYDRAULIC MODELING

## General description of the course

Throughout the training, the trainer will cover all the training material using the guide provided to you beforehand. After each session, participants will be able to individually practice the concepts covered using the instructions and exercises contained in the training guide.

From the second session onwards, a short period of time will be allocated at the beginning of each session to answer participants' questions and briefly review the content of the previous session.

The last session will allow the practice and acquisition of knowledge relating to the design of a system and its technical documentation through an application project. In addition, a period of time will be set aside during the last session to review the training material and answer specific questions from the participants.

Day 1 Session 1 (2.5 hours)	<ul> <li>Fundamental notions Recap</li> <li>Circuit and Installation</li> <li>Simulation Options</li> <li>Fluid/Line Configuration</li> <li>Recap on Project Template for Test Bench Use (Part A)</li> </ul>	<ul> <li>Simulation and Validation Tools</li> <li>Energy and Power Dynamic Instruments</li> <li>Other Plotters</li> <li>Detect Open Fluid Path in a Circuit</li> <li>Create Initial Conditions</li> <li>Steady State Option )</li> </ul>
Day 2 Session 2 (2.5 hours)	<ul> <li>Fluid Modeling</li> <li>Kinematic Viscosity</li> <li>Reynolds</li> <li>Specific Mass</li> <li>Compressibility</li> <li>Cavitation</li> </ul>	
Day 3 Session 3 (2.5 hours)	<ul> <li>Understand Component Models</li> <li>Heater/Cooler/Heat Exchanger</li> <li>Accumulator</li> <li>Directional Valves (Part B)</li> <li>Tanks</li> <li>Spool Position builder</li> <li>Mechanical Components</li> </ul>	

## Schedule Breakdown



Day 4 Session 4 (2.5 hours)	<ul> <li>Manufacturer Products Modeling (1/2)</li> <li>Pressure Compensation Strategies</li> <li>Model a Restrictive Pressure Compensator</li> <li>Model a Bypass Pressure Compensator (OPTIONAL)</li> <li>Model a Precompensated Valve</li> <li>Model a Postcompensated Valve</li> </ul>	<ul> <li>One among:</li> <li>Model an Open Loop PCLS Pump</li> <li>Close Loop Pump with Displacement Control</li> <li>Control the Torque of a Pump</li> </ul>
Day 5 Session 5 (2.5 hours)	<ul> <li>Manufacturer Products Modeling (2/2)</li> <li>One among:         <ul> <li>Model a Fix Displacement Travel Motor</li> <li>Model a Negative Displacement Control Hydraulic Motor</li> <li>Model a Hydraulic Steering Unit with Orbitrol (Optional)</li> </ul> </li> </ul>	
Day 6 Session 6 (2.5 hours)	<ul> <li>Mechanical Modeling (Part B)</li> <li>Export and modify a mechanism</li> <li>Create an Advanced Mechanism (Overview)</li> </ul>	<ul> <li>Component Sizing (Part B)</li> <li>Create a Sizing Sheet</li> <li>Link Parameter between two Sizing Sheets (Overview)</li> </ul>







