

**MPC700:**  
**DMC Maintenance**

<b>Duration:</b>	<b>2 Days Classroom 18 hours Online</b>
<b>Audience:</b>	<b>Process Control Engineers, DCS Technicians and Supervisors.</b>
<b>Prerequisites:</b>	<b>Knowledge of primary process control, PIDs etc. and preferably a few months of plant experience especially on a DCS.</b>
<b>Course Material:</b>	<b>Training slides and DMC software.</b>

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**Course Description and Objectives:**

This course trains on the use of DMC (dynamic matrix control) software. It starts from the fundamentals: the history behind DMC, the need for DMC, how DMC is superior when used right and where other control methodologies could be more appropriate. The course covers how to conduct step tests and identify DMC models, designing and building the DMC controller, startup and commissioning. The course also covers DMC maintenance, how to modify and improve DMC models after years of operation or after significant process changes. It covers automated step testing, PRBS and other new techniques.

**Learning Outcomes:**

At the end of the course, attendees will be equipped with the skills to design, maintain and troubleshoot DMC controllers. They will be able to use the modern 3G closed-loop dynamics identification technology to improve DMI models using Pitops-TFI. They will have the skills to observe plant trends and troubleshoot the DMC controller and discuss with operations and control engineers on how to improve the control. The following topics are covered in this course:

- APC and MPC
- Dynamic Models
- Components of an MPC System
- Step Response Coefficients
- Slave PID Control Optimization
- Conducting Step Tests
- MPC Control Matrix
- How MPC Works
- MPC Tuning Parameters
- LP Costs and Optimization
- Lets Build a New MPC System
- When to Use and When Not to Use MPC
- Choose MPC or APC for this Process
- MPC Monitoring and Troubleshooting
- MPC Commissioning and Good Practices