multisoft
Systems

Siemens Motion Control Training

COURSE CONTENT

GET IN TOUCH

Multisoft Systems
B - 125, Sector - 2, Noida

(+91) 9810-306-956

info@multisoftsystems.com

www.multisoftsystems.com

About Multisoft

Train yourself with the best and develop valuable in-demand skills with Multisoft Systems. A leading certification training provider, Multisoft collaborates with top technologies to bring world-class one-on-one and certification trainings. With the goal to empower professionals and business across the globe, we offer more than 1500 training courses, which are delivered by Multisoft's global subject matter experts. We offer tailored corporate training; project Based Training, comprehensive learning solution with lifetime e-learning access, after training support and globally recognized training certificates.

About Course

Siemens Motion Control Training by Multisoft Systems is a comprehensive program designed to equip professionals with in-depth knowledge of advanced motion control technologies used in modern industrial automation. This training focuses on the integration of Siemens PLCs, servo drives, and motion control systems to enable precise and efficient machine operations across various industries.

Module 1: Introduction to Motion Control & Siemens Automation

- ✓ Basics of motion control systems and applications
- ✓ Overview of Siemens automation portfolio
- ✓ Introduction to drives, motors, and controllers
- ✓ Motion control architecture and system components

Module 2: Siemens TIA Portal Fundamentals

- ✓ Introduction to TIA Portal interface and project setup
- ✓ Hardware configuration and device integration
- ✓ PLC programming basics for motion control
- ✓ Diagnostics and online monitoring

Module 3: Fundamentals of Drives & Motors

- ✓ Types of motors: Servo, Stepper, AC/DC motors
- ✓ Overview of Siemens SINAMICS drives
- ✓ Drive selection and sizing concepts
- ✓ Parameterization and commissioning of drives

Module 4: Axis Configuration & Control

- ✓ Single-axis configuration and setup
- ✓ Positioning, speed, and torque control
- ✓ Homing methods and referencing
- ✓ Jogging and manual control operations

Module 5: Motion Control Programming

- ✓ PLCopen motion control blocks
- ✓ Programming motion sequences

- ✓ Point-to-point and continuous motion
- ✓ Error handling and fault diagnostics

Module 6: Multi-Axis Synchronization

- ✓ Coordinated motion and axis grouping
- ✓ Gearing and camming concepts
- ✓ Interpolation techniques
- ✓ Real-time synchronization strategies

Module 7: HMI Integration & Visualization

- ✓ Designing HMI screens for motion control
- ✓ Monitoring axis status and alarms
- ✓ User interface for control and diagnostics
- ✓ Integration with Siemens WinCC

Module 8: Industrial Communication & Networking

- ✓ PROFINET and industrial communication basics
- ✓ Communication between PLC, drives, and HMI
- ✓ Network configuration and troubleshooting
- ✓ Data exchange and real-time control

Module 9: Safety in Motion Control Systems

- ✓ Safety concepts and standards
- ✓ Safe torque off (STO) and safety functions
- ✓ Emergency stop and fault handling
- ✓ Risk assessment and compliance

Module 10: Troubleshooting & Optimization

- ✓ Identifying and resolving motion errors

- ✓ Performance tuning and optimization
- ✓ Diagnostics tools in TIA Portal
- ✓ Preventive maintenance strategies

Module 11: Real-Time Projects & Case Studies

- ✓ Implementation of industrial motion control projects
- ✓ Packaging, conveyor, and robotic applications
- ✓ End-to-end project development
- ✓ Best practices and industry use cases

Module 12: Industry Applications & Future Trends

- ✓ Applications in manufacturing, robotics, and automation
- ✓ Smart factories and Industry 4.0 integration
- ✓ Digital twins and predictive maintenance
- ✓ Emerging trends in motion control technology