# **SIEMENS**

# **SINUMERIK ONE Start up**

# **General Information**

Course Code	SCT-SNONESU1
Global Code	NC-ONE-SIP
Length	4 Days
CEUs	2.6

## Audience

This advanced maintenance course is designed for electrical/electronic end user maintenance personnel and supporting manufacturing/production engineers who wish to know more about configuring the SINUMERIK ONE CNC Control. This course presumes the customer is using an HMI with either the IPC or ITC hardware, with the SINUMERIK Operate HMI software.

#### Prerequisites

- MS Windows XP Expertise
- 840Dsl Maintenance 1 w/ Operate

#### Profile

This course includes information regarding system hardware, system software, configuration, and commissioning procedures related to the SINUMERIK ONE, SIMATIC S7-1500 and its integrated SINAMICS S120 drive system. Course format is a mixture of lecture and hands-on exercises. SINUMERIK ONE simulators are utilized to allow the student to build proficiency with the hardware and software systems. A review of the procedures for complete system backup and restoration will also be conducted. This course does NOT cover the SIMATIC TIA Portal programming language.

NOTE: It is recommended that all ONE Startup personal enroll in SINUMERIK ONE Service and either SIMATIC S7 TIA Programming 1 or SIMATIC S7 System Tools and Troubleshooting 1

#### Objectives

Upon completion of this course, the student shall be able to:

- Back-up and restore all NC data to the control
- Back-up and restore all PLC data to the control
- Back-up and restore all PROFIBUS drive data to the control.
- Access and interpret control status displays for troubleshooting purposes
- Analyze system messages, alarm messages, and LED indications to identify failures

- Set and/or adjust machine data in the control
- Optimize a closed loop position control system
- Perform practical start-up and servicing exercises on provided simulator units.
- Set or modify machine data to optimize control functions.
- Add/edit alarm or message text.

## Topics

- 1. Machine data
  - a. Channel specific machine data
  - b. Axis specific machine data
  - c. Drive machine data
  - d. Display machine data
- 2. Drive configuration and fundamentals of optimization
- 3. Adaptation of control functions using machine data and/or interface signals
- 4. Start-up of compensations, synchronous actions, and axial coupling
- 5. PLC Interface
  - a. Structure of the PLC Basic program
  - b. Structure of the PLC User program
  - c. NC/PLC interface structure and interface signals
    d. Identifying OEM generated alarms and operator messages
- 6. Axis position control
- 7. Spindle control
- 8. NC Auxiliary functions
- 9. Diagnosis of servo problems
- 10. HMI System software and related tools
- 11. SINAMICS Control Unit and related tools
  - a. Diagnosis drive connection errors usingTopology comparison.
  - b. Identification and setting of module/motor datal
  - c. Diagnosis of servo problems in the ONE

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