# CNC AUTOMATION SYSTEMS

### **SITRAIN Vietnam**

The Deutches Haus Building, 7<sup>th</sup> Floor, 33 Le Duan Street, Ben Nghe Ward, District 1, Ho Chi Minh City, Vietnam Hotline: +84 1800 58 88 20 Email: adtraining.vn@siemens.com www.siemens.com.vn www.facebook.com/Siemens.Vietnam

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# **COURSE DETAIL**



### **OBJECTIVE**

The objective of the course is to provide the audience an overview of the system architecture, major functionalities and advantages of Sinumerik 828D/840D sl systems including SINAMICS S120.

### **TARGET GROUP**

- OEM
- Machine Dealer
- Machine Importer
- End-user

### **CONTENT**

- The setup of Siemens Vietnam for Sales, Services, Spare parts, Dealer & User support and Partner network
- Introductions of CNC Controllers, Drives and Motors including the possibilities of integration to the Digital World of Industry 4.0
- Operator interfaces and intuitive part programming by ShopMill (Milling) and ShopTurn (Turning)
- The introduction of the new developed internet Platform "CNC4you" and "Product Information System" guide you even more into the details of Sinumerik system after this Introduction Day. The power and strength of Sinumerik can be explored by reference projects, special functions or just by easy to use

### **PREREQUISITES**

• Basic knowledge of CNC Automation Systems

## **COURSE DETAIL**



### **OBJECTIVE**

In this course, you will learn how to work with SINUMERIK Operate and get familiarized with the principles of programming part programs.

The practical operating exercises based on given part programs on our training devices are an important part of the training.

In order to give the exercises a very practical orientation, we use the graphical simulation and simultaneous recording function of SINUMERIK Operate. The knowledge can be imparted in a very clear form and the learning outcome increased.

At the end of the course you will be able to operate SINUMERIK Operate with the standard user interface and to make changes in part programs. You will thus become more confident with machine tools and the risk of maloperation will be minimized.

### **TARGET GROUP**

- Machine Operators
- · Machine Importer
- Machine Dealer

### **CONTENT**

### Milling

- General technology basics
- Basics of operation
- Operating area "Parameter"
- Basics of programming with the programGUIDE
- Milling with programGUIDE
- · Drilling with programGUIDE
- Contour milling programGUIDE
- Mirror, offset, rotate, scale milling

### **Turning**

- General technology basics
- Basics of operation
- Operating area "Parameter"
- Basics of programming with the programGUIDE
- Milling with programGUIDE
- Drilling with programGUIDE
- Contour milling programGUIDE
- Operating mode "AUTO"
- Drawings of programming examples

### **PREREQUISITES**

- Basic knowledge CNC Automation System
- NC-SININT class is strongly recommended



### **OBJECTIVE**

The main focus on this course is working with the counter spindle cycle in ShopTurn. This module also contains the G code program for working with the counter spindle as an example that use SINUMERIK 828D and 840Dsl controls.

### **TARGET GROUP**

- Machine Operators
- Machine Importer
- Machine Dealer

### **CONTENT**

- ShopTurn
- Subspindle fundamentals
- MultiClamp A-axis.
- Drawings of programming examples

### **PREREQUISITES**

- Basic Knowledge CNC Automation System
- NC-SINOP programming class is strongly recommended

# COURSE DETAIL

### **OBJECTIVE**

This is an advanced-level course covering special aspects of ShopMill as well as 5-axis machine tool operation and programming and addresses high-speed cutting (HSC) topics for applications that use SINUMERIK 828D and 840D sl controls.

SINUMERIK 828D / 840D sl Operation and programming Advanced Milling and 5-axis | NC-84SLAPM | 5 days

### **TARGET GROUP**

- Machine Operators
- Machine Importer
- Machine Dealer

### **CONTENT**

- ShopMill
- 5-axis transformation and five-axis machine kinematics
- Swiveling cycle, system frames (Cycle800)
- Manual control for active transformation
- Drawings of programming examples

### **PREREQUISITES**

- Knowledge of, and experience in, programming SINUMERIK 840D sl including coordinate systems FRAME concepts, program jumps and control structures, and parameterization of standard cycles.
- NC-SINOP programming class is strongly recommended



### **OBJECTIVE**

This course teaches you how to maintain and service a SINUMERIK 828D with operator interface SINUMERIK Operate. You practice service in exercises on training equipment.

On completion of the course, you will have the knowledge and abilities necessary for handling ongoing service and maintenance work on machine tools with SINUMERIK 828D and SINAMICS S120, and you will also be able to perform second startups. You will be able to pinpoint and correct any faults. In this way, you will contribute toward minimizing standstill times and boosting productivity.

### **TARGET GROUP**

• Service and maintenance personnel

### **CONTENT**

- Overview and components of the SINUMERIK 828D
- Introduction to operation
- Data backup and restart
- Analysis of fault displays and diagnostics displays
- Basic configuration of the axes and drives
- Adaptation of the machine data following mechanical maintenance work
- Structure of the user program
- NC/PLC interface structure, important interface signals and user alarms
- · Practical service training on training Prerequisites

### **PREREQUISITES**

• Basic knowledge CNC Automation System



### **OBJECTIVE**

This course teaches you how to maintain and service a SINUMERIK 840D sl with operator interface SINUMERIK Operate. You practice service in exercises on training equipment.

On completion of the course, you will have the knowledge and abilities necessary for handling ongoing service and maintenance work on machine tools with SINUMERIK 840D sl and SINAMICS S120, and you will also be able to perform second startups. You will be able to pinpoint and correct any faults. In this way, you will contribute toward minimizing standstill times and boosting productivity.

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- Introduction to operation
- Data backup and restart
- Analysis of fault displays, and diagnostics displays
- Basic configuration of the axes and drives
- Adaptation of the machine data following mechanical maintenance work
- Structure of the user program
- NC/PLC interface structure, important interface signals and user alarms
- Practical service training on training devices

### **PREREQUISITES**

• Basic knowledge CNC Automation System