

# SIEMENS

*Ingenuity for life*

## Operation and programming

SINUMERIK 828D/840D sl training for programmers

Level 3—5-axis and high-speed milling

### General information

**Length:** 4 days

**Location:**

Siemens Industry, Inc.  
390 Kent Avenue  
Elk Grove Village, IL 60007

**Registration:**

[usa.siemens.com/cnc4you](http://usa.siemens.com/cnc4you)

**Capacity:** 12 students

**Cost:**

**There is no fee for the workshop.**

Participants are responsible for their own travel and living expenses.

Daily lunch will be provided during the training.

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

**Requirements** Knowledge of, and experience in, programming SINUMERIK 840D sl including coordinate systems FRAME concepts, tool compensations, program jumps and control structures, macro technology, and parameterization of standard cycles. Attendance of the Level 2 programGuide programming class is strongly recommended.

**Class specifics** There will be a set number of workstations available for the class. If use of a personal computer is desired, it must be a Windows 7 or older operating system. We will provide a 60-day trial version of SINUTRAIN for student use.

**Target group** Machine tool builders and dealers, who provide support and training for the programming and operation of 5-axis CNC milling machines equipped with SINUMERIK 828D and 840D sl controls.

**Content**

- Introduction and overview of transformations and 5-axis machining
- 5-axis transformation and five-axis machine kinematics
- 3D tool offset and relevant tool data (Cut3DC)
- Face milling, circumferential milling and high-speed cutting (HSC) issues (Cycle832)
- Manual control for active transformation
- Online tool length offset
- Machining oblique surfaces with swiveling tools with / without 5-axis transformation
- Swiveling cycle, system frames (Cycle800)
- Practical demonstrations and exercises using a 5-axis training machine