

## Basics of NC and Drives (NC-NCAN)

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### Short Description

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This course teaches the fundamentals of CNC and drives engineering. Practical exercises on our training equipment are an important part of the course.

### Objectives

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This course teaches the fundamentals of CNC and drives engineering. Practical exercises on our training equipment are an important part of the course.

On completion of the course, you will be familiar with the design and principle of operation of a machine tool with CNC control and drives. You will have laid sound foundations for successful use of your knowledge on your machines. A fundamental understanding of the whole system will enable you to precisely describe problems on your machine tool and solve them together with your partners. Application of the knowledge gained will boost your machine's productivity and reduce standstill times.

Attendance at this course is a prerequisite for attending our advanced SINUMERIK service and commissioning courses. We recommend a period of 2 to 4 months to gain practical experience before attending the advanced courses.

### Target Group

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Commissioning engineers  
Engineering personnel  
Service personnel  
Maintenance personnel  
Sales personnel for SINUMERIK systems

### Content

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Structure and tasks of a CNC control  
Components of a machine tool  
Operating modes and operator functions  
Fundamentals of parts programming  
Meaning of compensations, parameters, setting data and machine data  
Fundamentals of data backup  
Introduction to drive engineering and closed-loop control technology  
Principle of position control, speed control and current control  
Methods for the recording of internal signals  
Overview of the feed drive and the main spindle drive  
VDI interface and interface signals  
Practical exercises on training models with digital drives

### Prerequisites

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Basic knowledge of PLC programming.

### Note

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The exercises are carried out on training models with SINUMERIK 840D sl. The contents of the course are also applicable to the SINUMERIK ONE.

### Type

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Face-to-face training

### Duration

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10 days

### Language

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