

# CNC Power Engineering

## Always on the move

### CNC, Drives, and Software Training Catalog 2026

## Who besides you has the best expertise in your area of business?

The answer is obvious and quite simple: you are the expert in your field. Similarly, no one other than NUM could claim to have the deepest expertise of our extended range of drives and CNCs. After all, this has been our business for sixty years. This is why we are your number one partner for the training of your teams.

Whether you are a User, an OEM, a Maintenance specialist or a System builder, NUM has in its catalogue all kind of training sessions dedicated to your applications and this for all generation of NUM products making parts on today machines.

Of course, each customer has its own requirements, each machine and each application has its own specificities, and this is why we can also offer customized training sessions focused on your particular needs.

As a provider of CNC High End Applications, we have organized our training sessions by features and level of knowledge required, in order to help you to get all the data you need and only the data you need to be the most efficient. These sessions are conducted by training specialists and applications engineers so you can be assured that you will always get the most accurate and professional answers, whatever your question or concern might be. These sessions will give a chance to develop a durable relationship between our companies to further develop cooperation for the full benefit of all.

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## Training with NUM: your advantages

- Technical data are up to date
- Should you need a specific function, you will get in depth information
- Partnership development
- You will be in touch with the experts in every domain of NUM activity
- Whatever your area of expertise might be (Maintenance, Service, Programming, Setup...), you will find the courses you need
- Full range of products and software in one location

## Training Centres

All NUM technical centres are equipped to provide training. These sessions will take place either in our premises or in your facility.



Some training facilities



# Training Courses

The different training modules are linked in a way to provide a logical path for mastering our application solutions in your area of expertise.

	FX	TR	3	0	1
<b>Control Series</b>					
Flexium <sup>+</sup> und FlexiumPro	FX				
Flexium <sup>+</sup>	FL				
FlexiumPro	FP				
<b>Training</b>					
<b>Type</b>					
Product Knowledge			1		
Operation and Diagnostics			2		
Maintenance			3		
Engineering and Integration			4		
<b>Modifier</b>					
<b>Expertice Level</b>					
Beginner				1	
Advanced				2	
Specialist				3	

## Generic Training Sessions

FXTR101	Flexium system description
FXTR102	Flexium and Safety
FXTR201	Operation and basic maintenance
FXTR202	Advanced part programming
FXTR213	Flexium 3D
FXTR223	Dynamic operators in C
FXTR233	High speed cutting – 5-axis functions
FXTR301	Flexium system maintenance
FXTR433	Extended NCK Access (ENA)
FXTR463	Safety including NUM-SAMX

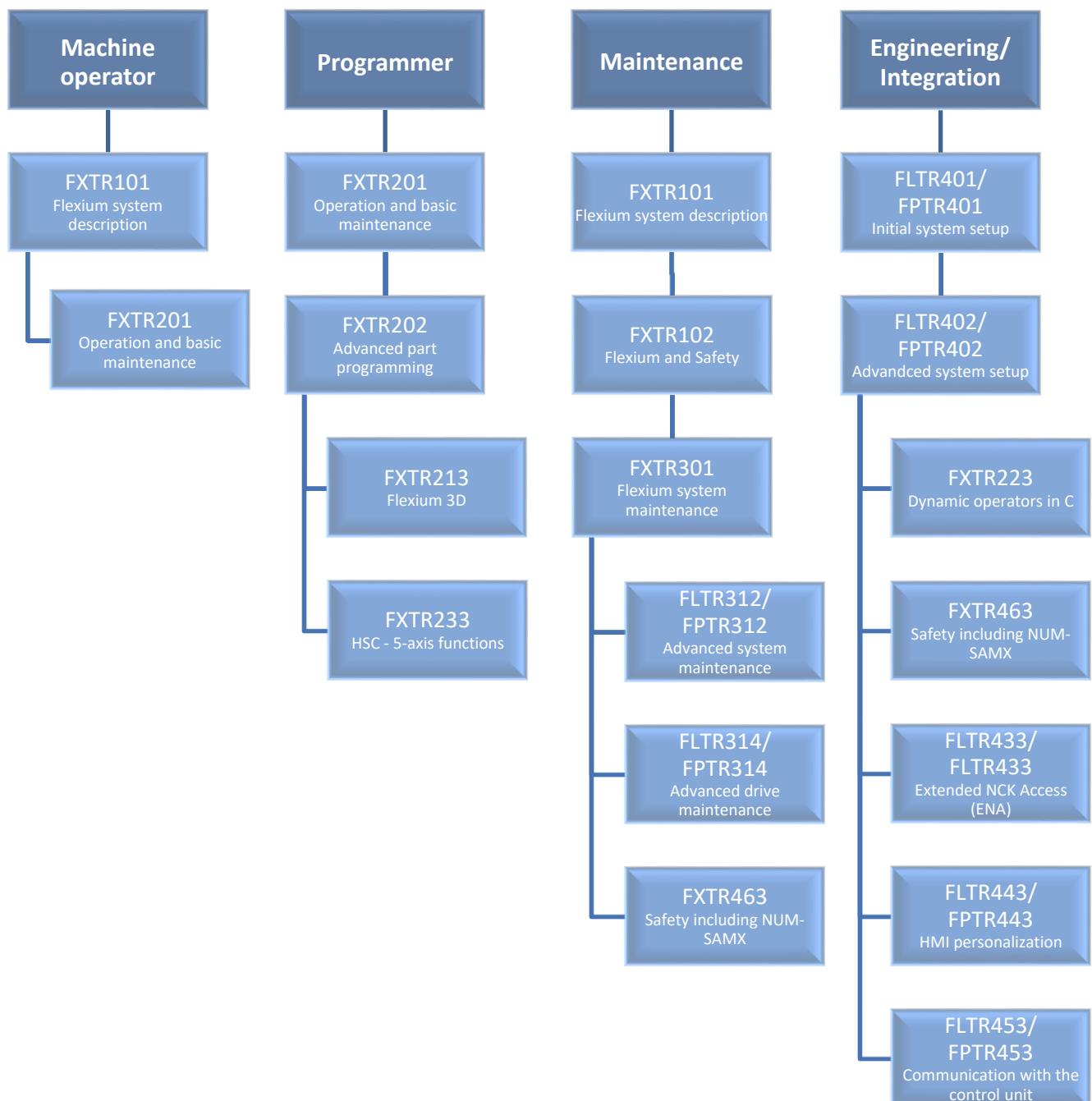
### Flexium<sup>+</sup>-specific Training Sessions

FLTR312	Flexium <sup>+</sup> system advanced maintenance
FLTR314	NUMDrive X advanced maintenance
FLTR401	Flexium <sup>+</sup> system initial setup
FLTR402	Flexium <sup>+</sup> system advanced setup
FLTR443	Flexium <sup>+</sup> HMI personalization
FLTR453	Communication with Flexium <sup>+</sup>

### FlexiumPro-specific Training Sessions

FPTR312	FlexiumPro system advanced maintenance
FPTR314	NUM DrivePro advanced maintenance
FPTR401	FlexiumPro system initial setup
FPTR402	FlexiumPro system advanced setup
FPTR443	FlexiumPro HMI personalization
FPTR453	Communication with FlexiumPro

## Proposed Training Paths



## Your Training Contacts

### Austria:

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([sales.ch@num.com](mailto:sales.ch@num.com)).

## Training Organization

### **Quotation**

Offers can be asked at your training contacts (see section 'Your Training Contacts').

### **Date and timetable**

Training dates and timetables will be part of a quotation.

### **Journey**

Your local sales representative of NUM will provide you with journey information.

### **Hotels**

Your local sales representative of NUM can recommend you hotels near to the training places.

# Flexium system description

**FXTR101**

Your area of interest	Prerequisite
General knowledge	None
Objectives	Supports
<ul style="list-style-type: none"> <li>✓ Understanding the Flexium range structure (CNCs and Drives)</li> <li>✓ Understanding the main functions</li> <li>✓ Ability to define a configuration with the Flexium catalogue</li> </ul>	<p>Training materials</p> <ul style="list-style-type: none"> <li>○ Individual components</li> <li>○ Simulator</li> </ul> <p>Deliveries</p> <ul style="list-style-type: none"> <li>○ Course presentation (on memory stick)</li> <li>○ Flexium catalogue (on memory stick)</li> </ul>
Training Content	
<p>Flexium CNC presentation</p> <ul style="list-style-type: none"> <li>○ The different models of CNCs</li> <li>○ Hardware structure – Software functions</li> </ul>	<p>NUM DrivePro presentation</p> <ul style="list-style-type: none"> <li>○ Hardware structure</li> <li>○ Drives functions and performances</li> <li>○ Axes and spindle motors</li> </ul>
<p>The panels</p> <ul style="list-style-type: none"> <li>○ PC Panels</li> <li>○ Machine panels</li> </ul>	<p>Tools</p> <ul style="list-style-type: none"> <li>○ PLC programming</li> <li>○ Web tools</li> </ul>
<p>The PLC</p> <ul style="list-style-type: none"> <li>○ Structure</li> <li>○ Programming languages</li> <li>○ IOs</li> </ul>	<p>Applications</p> <ul style="list-style-type: none"> <li>○ From the single unit CNC to the multi CNC - multi panels configurations</li> </ul>
<p>NUMDrive X presentation</p> <ul style="list-style-type: none"> <li>○ Hardware structure</li> <li>○ Drives functions and performances</li> <li>○ Axes and spindle motors</li> </ul>	<p>Questions and answers (1/2 hour)</p>
Duration	Date / Costs
1 day	Please consult your local training contact

# Flexium and Safety

# FXTR102

Your area of interest	Prerequisite
General knowledge	None
Objectives	Supports
<ul style="list-style-type: none"> <li>✓ Understanding the Flexium safety concepts</li> <li>✓ Understanding the various safety features</li> <li>✓ Ability to define the components and development required for a particular configuration</li> </ul>	<p>Training materials</p> <ul style="list-style-type: none"> <li>○ Individual components</li> <li>○ Simulator</li> </ul> <p>Deliveries</p> <ul style="list-style-type: none"> <li>○ Course presentation (on memory stick)</li> <li>○ Flexium catalogue (on memory stick)</li> </ul>
Training Content	
<p>Safety: What is it?</p> <ul style="list-style-type: none"> <li>○ Safety PLCs</li> <li>○ Safe motions</li> <li>○ Safety level</li> </ul>	<p>Safety and Motions</p> <ul style="list-style-type: none"> <li>○ SAMX, STOX and NUMDrive X or NUM DrivePro</li> </ul>
General on EtherCAT and FSoE	Questions and answers (1/2 hour)
<p>The Safe PLC</p> <ul style="list-style-type: none"> <li>○ Structure</li> <li>○ Programming languages</li> <li>○ I/Os</li> </ul>	
Duration	Date / Costs
1 day	Please consult your local training contact

# Operation and basic maintenance

FXTR201

## Your area of interest

Machine operator – 1<sup>st</sup> level maintenance

## Objectives

- ✓ Ability to run a machine equipped with Flexium system
- ✓ Understanding and adjusting the coordinate systems and tools offsets
- ✓ Understanding operators message and status indicators to perform a first level maintenance

## Prerequisite

Knowledge of NUM products or FXTR101

## Supports

- Training materials
  - Individual components
  - Simulator
- Deliveries
  - Course presentation (on memory stick)
  - Programming manual (on memory stick)

## Training Content

### Using the HMI

- Structure of the HMI
- Modes of operation
- ISO concepts (interpolation – feedrate – tools offsets – main canned cycles)
- Coordinate systems – programmable axes
- Work preparation, tools offsets, origin presets
- Basic of parametric programming

### Tools

- Web tools
- Flexium license loader

Questions and answers (2 hours)

### First level of maintenance

- Status indicators
- Operators messages
- LED indications
- Backup of essential data
- Adding a system option

## Duration

3 days

## Date / Costs

Please consult your local training contact

# Advanced part programming

**FXTR202**

## Your area of interest

Advanced part programming – custom macros – special functions for OEM

## Objectives

- ✓ Mastering the advanced ISO functions of the system
- ✓ Ability to create a custom macro (tool changer – milling head exchange – probing etc.)

## Prerequisite

Level FXTR201

## Supports

- Training materials
  - Individual components
  - Simulator
- Deliveries
  - Course presentation (on memory stick)
  - Programming and advanced programming manual (on memory stick)

## Training Content

### Advanced ISO functions

- Polar programming
- Probing management
- Pocket cycles
- Complements on parametric programming
  - Detailed information on E parameters
  - Relation with the outside via the PLC
- Structured programming
- Dynamic operators
- Customized G codes

### Questions and answers

## Exercises

## Duration

4 days

## Date / Costs

Please consult your local training contact

# Flexium 3D

**FXTR213**

## Your area of interest

Machine operation - Programming

## Prerequisite

Knowledge of NUM products or FXTR201

## Objectives

- ✓ Using Flexium 3D to simulate and validate a part program
- ✓ Interacting with Flexium HMI to correct possible programming faults
- ✓ Optional: Customizing Flexium 3D for machine simulation

## Supports

- Training materials
  - Simulator
- Deliveries
  - Course presentation (on memory stick)

## Training Content

### Flexium 3D presentation

- Principle of operation
- The different screens

Questions and answers (2 hours)

### Running Flexium 3D

- Program configuration
- Defining the blank and the tools
- Off line and On line simulation

### Exercises

### Optional

- Designing a machine model

## Duration

1 day + 1 day optional

## Date / Costs

Please consult your local training contact

# Dynamic operators in C

FXTR223

## Your area of interest

Customized CNC extensions

## Prerequisite

FXTR202 and C language

## Objectives

- ✓ Develop an application using dynamic operators in C

## Supports

Training materials

- Individual components
- Simulator

## Deliveries

- Course presentation (on memory stick)
- Flexium catalogue (on memory stick)

## Training Content

- Principle of dynamic operators
- Short example using classic dynamic operators
- Review list of parameters
- The compiler
- Examples
- Trace and debug

## Duration

1 day

## Date / Costs

Please consult your local training contact

# High Speed Cutting – 5-axis functions

**FXTR233**

## Your area of interest

5-axis parts machining

## Prerequisite

FXTR202 and FPTR401

## Objectives

- ✓ Mastering 5-axis machining functions
- ✓ RTCP (Rotating Tool Centre Point)
- ✓ Inclined plane
- ✓ High speed cutting

## Supports

- Training materials
  - Individual components
  - Simulator
- Deliveries
  - Course presentation (on memory stick)
  - Flexium catalogue (on memory stick)

## Training Content

- 5-axis NC functions
- RTCP and inclined plane parameterization
- Application
- High speed machining functions
- Speed and acceleration controls
- Optimization of parameters
- Axes adjustments
- Flexium tools instruments
- Practical case

Questions and answers (1/2 hour)

## Duration

2 days

## Date / Costs

Please consult your local training contact

# Flexium system maintenance

# FXTR301

Your area of interest	Prerequisite
Maintenance	Level FXTR101
Objectives	Supports
<ul style="list-style-type: none"> <li>✓ Ability to detect and replace defective components in a short time</li> <li>✓ Predictive maintenance</li> </ul>	<ul style="list-style-type: none"> <li>Training materials <ul style="list-style-type: none"> <li>○ Simulator</li> </ul> </li> <li>Deliveries <ul style="list-style-type: none"> <li>○ Course presentation (on memory stick)</li> </ul> </li> </ul>
Training Content	
Flexium system maintenance	Questions and answers (1 hour)
<ul style="list-style-type: none"> <li>○ System structure</li> <li>○ Components</li> <li>○ System start up</li> <li>○ Diagnostics</li> <li>○ Software updates</li> <li>○ Service tool</li> <li>○ Safety</li> <li>○ Part replacement</li> </ul>	
Drives maintenance	
<ul style="list-style-type: none"> <li>○ Product knowledge</li> <li>○ Drives exchange procedure</li> </ul>	
Duration	Date / Costs
3 days	Please consult your local training contact

# Flexium<sup>+</sup> system advanced maintenance

FLTR312

Your area of interest	Prerequisite
Maintenance	Level FXTR301
Objectives	Supports
<ul style="list-style-type: none"> <li>✓ Ability to detect and replace defective components in a short time</li> <li>✓ Predictive maintenance</li> </ul>	<p>Training materials</p> <ul style="list-style-type: none"> <li>○ Simulator</li> </ul> <p>Deliveries</p> <ul style="list-style-type: none"> <li>○ Course presentation (on memory stick)</li> </ul>
Training Content	
<p>Flexium<sup>+</sup> system maintenance</p> <ul style="list-style-type: none"> <li>○ Detailing the product structure</li> <li>○ Exchange zone</li> <li>○ Troubleshooting with Flexium HMI</li> <li>○ Flexium Tools</li> <li>○ Parameters modification</li> <li>○ Debugging with the PLC</li> <li>○ PLC program adjustments</li> <li>○ Backup and restore</li> </ul>	<p>NUMDrive X drives advanced maintenance</p> <ul style="list-style-type: none"> <li>○ Detailed analysis</li> <li>○ Drives instruments</li> <li>○ Drives exchange procedure</li> <li>○ Safety application maintenance</li> </ul> <p>Questions and answers (1 hour)</p>
Duration	Date / Costs
3 days	Please consult your local training contact

# FlexiumPro system advanced maintenance

**FPTR312**

## Your area of interest

Maintenance

## Objectives

- ✓ Ability to detect and replace defective components in a short time
- ✓ Predictive maintenance

## Prerequisite

Level FXTR301

## Supports

Training materials
 

- Simulator

## Deliveries

- Course presentation (on memory stick)



Training course  
in preparation

## Training Content

### FlexiumPro system maintenance

- Detailing the product structure
- Exchange zone
- Troubleshooting with Flexium HMI
- Flexium Tools
- Parameters modification
- Debugging with the PLC
- PLC program adjustments
- Backup and restore

### NUM DrivePro drives advanced maintenance

- Detailed analysis
- Drives instruments
- Drives exchange procedure
- Safety application maintenance

Questions and answers (1 hour)

## Duration

3 days

## Date / Costs

Please consult your local training contact

# NUMDrive X advanced maintenance

FLTR314

<b>Your area of interest</b>	<b>Prerequisite</b>
Machine maintenance	Level FXTR301
<b>Objectives</b>	<b>Supports</b>
✓ Ability to detect and replace components or adjust parameters	Training materials <ul style="list-style-type: none"> <li>○ Simulator</li> </ul> Deliveries <ul style="list-style-type: none"> <li>○ Course presentation (on memory stick)</li> </ul>
<b>Training Content</b>	
Review <ul style="list-style-type: none"> <li>○ Range description</li> <li>○ Troubleshooting with Flexium HMI</li> </ul> Components connections <ul style="list-style-type: none"> <li>○ Structure of a NUMDrive X application</li> </ul> Adjustments <ul style="list-style-type: none"> <li>○ Using Flexium Tools for diagnostic</li> <li>○ Main drive parameters</li> <li>○ Adjustment and control</li> </ul>	Questions and answers
<b>Duration</b>	<b>Date / Costs</b>
3 days	Please consult your local training contact

# NUM DrivePro advanced maintenance

**FPTR314**

## Your area of interest

Machine maintenance

## Objectives

- ✓ Ability to detect and replace components or adjust parameters

## Prerequisite

Level FXTR301

## Supports

Training materials

- Simulator

## Deliveries

- Course presentation (on memory stick)



## Training Content

### Review

- Range description
- Troubleshooting with FlexiumPro HMI

### Questions and answers

### Components connections

- Structure of a NUM DrivePro application

### Adjustments

- Using FlexiumPro Tools for diagnostic
- Main drive parameters
- Adjustment and control

## Duration

3 days

## Date / Costs

Please consult your local training contact

# Flexium<sup>+</sup> system initial setup

FLTR401

## Your area of interest

Setting up and programming of a Flexium<sup>+</sup>

## Objectives

- ✓ Create a first Flexium<sup>+</sup> application for a simple machine
- ✓ Control basic functions – Run two axes and a spindle

## Prerequisite

FXTR201

## Supports

Training materials

- Simulator

## Deliveries

- Course presentation (on memory stick)
- Installation manual – Commissioning manual – Flexium Tools (all on memory stick)

## Training Content

Understanding Flexium<sup>+</sup> structure

Questions and answers

### Flexium Tools presentation

- Getting familiar with the package
- Languages
- Variables
- Structure of a project

### Practical exercise

- Creating the control structure
- Integrating IOs (CANopen and Ethernet)
- Integrating a panel
- Handling modes, manual and automatic commands
- Operator messages
- Power on, security
- Integrating axes and spindle
- First level of parameterization
- Running a simple part program
- Introduction to the custom visualization

## Duration

5 days

## Date / Costs

Please consult your local training contact

# Flexium<sup>+</sup> system advanced setup

**FLTR402**

<b>Your area of interest</b>	<b>Prerequisite</b>
Setting up and programming of a Flexium <sup>+</sup>	FPTR401
<b>Objectives</b>	<b>Supports</b>
<ul style="list-style-type: none"> <li>✓ Commissioning a Flexium system on any kind of machine</li> </ul>	<ul style="list-style-type: none"> <li>Training materials <ul style="list-style-type: none"> <li>○ Simulator</li> </ul> </li> <li>Deliveries <ul style="list-style-type: none"> <li>○ Course presentation (on memory stick)</li> <li>○ Full set of Flexium manuals – Flexium Tools <ul style="list-style-type: none"> <li>– Example project (all on memory stick)</li> </ul> </li> </ul> </li> </ul>
<b>Training Content</b>	
Detailed analysis of exchange variables	Questions and answers
Flexium Tools complements <ul style="list-style-type: none"> <li>○ Project simulation and debug</li> <li>○ Application control (Tasks – automated checks)</li> <li>○ Field bus control</li> <li>○ Advanced functions (Probing – tool wear – shutdown etc.)</li> <li>○ Custom screens complements</li> <li>○ Optional functions (multi NCK – multi panels etc.)</li> <li>○ Writing custom libraries</li> </ul>	
<b>Duration</b>	<b>Date / Costs</b>
5 days	Please consult your local training contact

# FlexiumPro system initial setup

**FPTR401**

<b>Your area of interest</b>	<b>Prerequisite</b>
Setting up and programming of a FlexiumPro	FXTR201
<b>Objectives</b>	<b>Supports</b>
<ul style="list-style-type: none"> <li>✓ Create a first FlexiumPro application for a simple machine</li> <li>✓ Control basic functions – Run two axes and a spindle</li> </ul>	<p>Training materials</p> <ul style="list-style-type: none"> <li>○ Simulator</li> </ul> <p>Deliveries</p> <ul style="list-style-type: none"> <li>○ Course presentation (on memory stick)</li> <li>○ Installation manual – Commissioning manual – Flexium Tools (all on memory stick)</li> </ul>
<b>Training Content</b>	
Understanding FlexiumPro structure	Questions and answers
FlexiumPro Tools presentation	
<ul style="list-style-type: none"> <li>○ Getting familiar with the package</li> <li>○ Languages</li> <li>○ Variables</li> <li>○ Structure of a project</li> </ul>	
Practical exercise	
<ul style="list-style-type: none"> <li>○ Creating the control structure</li> <li>○ Integrating IOs (CANopen and Ethernet)</li> <li>○ Integrating a panel</li> <li>○ Handling modes, manual and automatic commands</li> <li>○ Operator messages</li> <li>○ Power on, security</li> <li>○ Integrating axes and spindle</li> <li>○ First level of parameterization</li> <li>○ Running a simple part program</li> <li>○ Introduction to the custom visualization</li> </ul>	
<b>Duration</b>	<b>Date / Costs</b>
5 days	Please consult your local training contact

# FlexiumPro system advanced setup

**FPTR402**

## Your area of interest

Setting up and programming of a FlexiumPro

## Objectives

- ✓ Commissioning a Flexium system on any kind of machine

## Prerequisite

FPTR401

## Supports

Training materials

- Simulator



Training course  
in preparation

## Deliveries

- Course presentation (on memory stick)
- Full set of Flexium manuals – Flexium Tools  
– Example project (all on memory stick)

## Training Content

Detailed analysis of exchange variables

Questions and answers

### FlexiumPro Tools complements

- Project simulation and debug
- Application control (Tasks – automated checks)
- Field bus control
- Advanced functions (Probing – tool wear – shutdown etc.)
- Custom screens complements
- Optional functions (multi NCK – multi panels etc.)
- Writing custom libraries

## Duration

5 days

## Date / Costs

Please consult your local training contact

# Extended NCK Access (ENA)

**FXTR433**

## Your area of interest

Setting up and programming of a Flexium

## Prerequisite

FXTR402 required

## Objectives

- ✓ Exchange of additional data between NCK and PLC

## Supports

- Training materials
  - Simulator

## Deliveries

- Course presentation (on memory stick)
- Flexium Tools – Example project

## Training Content

Structure of internal communication in Flexium systems

Questions and answers

### ENA library

- Available parameters and functions

### Application

- Reading parameters
- Writing parameters
- Files management

## Duration

2 days

## Date / Costs

Please consult your local training contact

Your area of interest	Prerequisite
Setting up and programming of a Flexium <sup>+</sup> HMI	<ul style="list-style-type: none"> <li>○ FXTR101</li> <li>○ Windows knowledge</li> <li>○ Programming knowledge of script languages</li> </ul>
Objectives	Supports
<ul style="list-style-type: none"> <li>✓ Creating Flexium HMI custom pages in HTML/JavaScript</li> </ul>	<p>Training materials</p> <ul style="list-style-type: none"> <li>○ Simulator</li> </ul> <p>Deliveries</p> <ul style="list-style-type: none"> <li>○ Course presentation (on memory stick)</li> <li>○ Software Development Kit access</li> <li>○ Example (on memory stick)</li> </ul>
Training Content	
Introduction in the architecture of Flexium <sup>+</sup> HMI	Abstract of development tools
Explanation of the Flexium <sup>+</sup> HMI components	Exercises related to practice using HTML and JavaScript
<ul style="list-style-type: none"> <li>○ FXBrowser</li> <li>○ FXServer</li> <li>○ FXLib</li> <li>○ FXLog</li> </ul>	<ul style="list-style-type: none"> <li>○ Object instancing of the classes of the development components</li> <li>○ Using of the development components</li> <li>○ Characteristics of the array structure of event classes</li> <li>○ Programming examples</li> </ul>
Structure of configuration files	Questions and answers
<ul style="list-style-type: none"> <li>○ FXServer.ini</li> <li>○ FXUser.ini</li> </ul>	
Explanation of the FXServer architecture	
<ul style="list-style-type: none"> <li>○ Event handling</li> <li>○ task management</li> <li>○ ...</li> </ul>	
Duration	Date / Costs
3 days	Please consult your local training contact

## Your area of interest

Setting up and programming of a Flexium<sup>+</sup>

## Prerequisite

- FXTR101
- Windows knowledge
- Knowledge of object oriented programming (OOP) and use of COM server

## Objectives

- ✓ Using of FXServer for the communication with the different components of Flexium<sup>+</sup>. This allows connections to other systems, independent HMIs, etc. to be realized.

## Supports

Training materials

- Simulator

## Deliveries

- Course presentation (on memory stick)
- Software Development Kit access
- Programming examples in C# and C++ (on memory stick)

## Training Content

Introduction in the architecture of FXServer

Exercises related to practice using C#

Explanation of the Flexium<sup>+</sup> components (FXServer, FXLib, FXLog) and configuration file (FXServer.ini)

- Object referencing and instancing of the classes of the development components
- Using of the development components
- Characteristics of the array structure of event classes
- Programming examples

Explanation of the FXServer architecture (Event handling, task management, ...)

Questions and answers

## Duration

2 days

## Date / Costs

Please consult your local training contact

## Your area of interest

Setting up and programming of a FlexiumPro

## Objectives

- ✓ Creating FlexiumPro HMI custom pages in C#

## Prerequisite

- FXTR101
- Windows knowledge
- Programming knowledge of C#

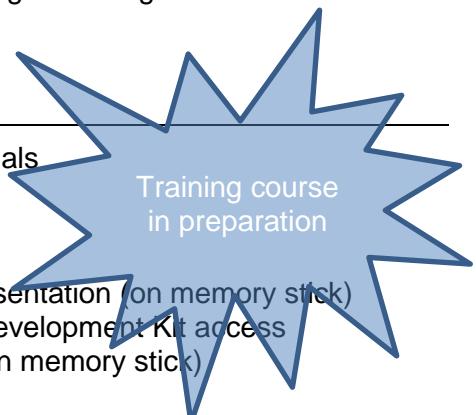
## Supports

Training materials

- Simulator

## Deliveries

- Course presentation (on memory stick)
- Software Development Kit access
- Example (on memory stick)



Training course  
in preparation

## Training Content

Introduction in the architecture of FlexiumPro HMI

Explanation of the FlexiumPro HMI architecture

Structure of configuration files

Abstract of development tools

Exercises related to practice using C#

- Programming examples

Questions and answers

## Duration

3 days

## Date / Costs

Please consult your local training contact

## Your area of interest

Setting up and programming of a FlexiumPro

## Objectives

- ✓ Use of the FlexiumPro SDK for communication with the various FlexiumPro components. This allows connections to other systems, independent HMIs, etc. to be realized.

## Training Content

Introduction in the architecture of FlexiumPro SDK

## Duration

2 days

## Prerequisite

- FXTR101
- Windows knowledge
- Programming knowledge of C#

## Supports

Training materials

- Simulator

Deliveries

- Course presentation (on memory stick)
- Software Development Kit access
- Programming examples in C# and C++ (on memory stick)

Training course in preparation

Exercises related to practice using C#

- Programming examples

Questions and answers

## Date / Costs

Please consult your local training contact

# Safety including NUM-SAMX

**FXTR463**

## Your area of interest

Setting up and programming of a Flexium

## Prerequisite

FXTR102 or FPTR402

## Objectives

- ✓ Understand concept.
- ✓ Program and setup a safety application on a Flexium<sup>+</sup> or FlexiumPro system

## Supports

Training materials

- Simulator

## Deliveries

- Course presentation (on memory stick)
- Software Development Kit access
- Example (on memory stick)

## Training Content

Hardware structure

Questions and answers

Safety functions

Safety application concept

Safe PLC programming

Drive functions

- NUM-STOX setup
- NUM-SAMX setup

## Duration

2 days

## Date / Costs

Please consult your local training contact

## Individual trainings

Your area of interest	Prerequisite
Something around NUM controls	Depending on the training content
Objectives	Supports
✓ Will be defined with you	<ul style="list-style-type: none"> <li>Training materials</li> <li>○ Simulator</li> </ul> <p>Deliveries</p> <ul style="list-style-type: none"> <li>○ Course presentation (on memory stick)</li> <li>○ Example (on memory stick) if available</li> </ul>
Training Content	
Will be developed with you	
Duration	Date / Costs
To be defined	Please consult your local training contact

Individual trainings can happen at NUM locations or customer site.

## Booking Form

For booking of training please send an e-mail to one of the following address with content below:

**France:** centre.formation@num.com

**Germany:** timo.zaiser@num.com

**Italy:** alessandra.villa@num.com

**Switzerland:** sales.ch@num.com

**United Kingdom:** sales.uk@num.com

For other countries, please contact your local sales representative or NUM Switzerland  
(sales.ch@num.com).

### E-mail content

Company name:

Contact person:

Function:

Phone:

Address:

Your order number:

Training number:

Training date:

Training location:

Names of the participants: