

## Motion Control 1 & 2 in the TIA-Portal (TIA-MC1&2)

### Short Description

\* SIMATIC - Motion Control 1 in the TIA Portal (TIA-MC1) In this course, you will learn to program the motion control functions integrated in the SIMATIC S7-1500 or S7-1200 controllers using TIA Portal. Core topics are the technology objects speed axis, positioning axis and synchronous axis with practical exercises on training devices (SIMATIC S7-1500 and SINAMICS). \* SIMATIC - Motion Control 2 in the TIA Portal (TIA-MC2) In this course, you will learn to program the motion control functions of the technology controller SIMATIC S7-1500T using TIA Portal. Core topics are gearing, cam discs and kinematic functions including Safety Integrated.

### Objectives

(TIA-MC1)

■ You will program the SIMATIC S7-1500 or S7-1200 controllers in the TIA Portal. You will be able to precisely control the motion of axes with the integrated motion control functions. \* In this technology course, you will learn step by step the benefits and the use of these functions. After each learning step, you will deepen your knowledge with hands-on programming. \* After attending the course, you will understand the interaction of the technological functions. You will be able to select and configure appropriate technology objects, such as speed axis, positioning axis and synchronous axis, and integrate them in your program.

(TIA-MC2)

■ You can already parameterize the integrated Motion Control functions of the SIMATIC S7-1500 and integrate them into your program. Using the technology CPU, you will extend the applications with absolute synchronous axes and camming. In this technology course, you will learn step by step the benefits and the use of these functions. After each learning step, you will deepen your knowledge with hands-on programming. After completing the course, you will understand how camming works and be able to efficiently assign parameters for technology objects.

### Content

(TIA-MC1)

■ Basics of motion control \* Speed Axis technology object \* Positioning Axis technology object \* Homing and traversing movements \* Programming with PLC open \* Error messages and diagnostics \* Communication and libraries \* Output cam and measuring input \* Closed-loop control and optimization \* Synchronous Axis technology object \* Practical exercises on training devices with SIMATIC S7-1500 and SINAMICS drives

(TIA-MC2)

■ Overview of S7-1500T Technology CPU \* Absolute and relative gearing \* Strategies for synchronization and desynchronization \* Cam disc creation using the graphical cam editor and during runtime \* Kinematic functions configuration and control \* Interplay between Motion Control and Safety Integrated \* Cam disc creation using libraries • Practical exercises on training devices with SIMATIC S7-1500T and SINAMICS drives

### Prerequisites

(TIA-MC1)

■ Knowledge of programming in the SIMATIC TIA Portal (equivalent to knowledge after completion of the TIA-PRO1 or TIA-SERV2 course) \* SINAMICS S120, S210 or V90

(TIA-MC2)

■ Experience with programming motion control functions in SIMATIC TIA Portal corresponding to the course TIA-MC1

### Type

Face-to-face training

### Duration

5 days

### Language

en

### Fee

21,040 ZAR