

KUKA College: Topics covered

in the training from 23.10.2017 to 27.10.2017

Robot Programming 1 software version KSS 8.x (KR C4)

Participant: MUHARREM GÜL

- **Structure and function of a KUKA robot system**
 - Overview mechanics of a KUKA robot
 - Overview KR C4 robot controller
 - Overview KUKA smartPAD
 - Robot safety
- **Moving the robot**
 - Reading and interpreting robot controller messages
 - Selecting and setting the operating mode
 - Moving individual robot axes
 - Coordinate systems in conjunction with robots
 - Moving the robot in the world coordinate system
 - Moving the robot in the tool coordinate system
 - Moving the robot in the base coordinate system
 - Jogging with a stationary tool
- **Starting up steps at the robot**
 - Mastering principle
 - Mastering the robot
 - Loads on the robot
 - Tool load data
 - Supplementary loads on the robot
 - Tool calibration
 - Base calibration (workpiece coordinate system)
 - Calibration of a stationary tool
 - Calibration of a robot-guided workpiece
 - Start Up Mode
- **Executing robot programs**
 - Performing an initialization run
 - Selecting and starting robot programs
- **Working with program files**
 - Creating program modules
 - Editing program modules
 - Archiving and restoring robot programs
 - Tracking program modifications and changes of state by means of the logfile
- **Creating and modifying programmed motions**
 - Creating new motion commands
 - Creating cycle-time optimized motion (axis motion)
 - Creating motion commands
 - Modifying motion commands
 - Motion programming with external TCP/stationary tool
- **Programming collision detection**
 - Programming motions with collision detection
- **Using logic functions in the robot program**
 - Introduction to logic programming
 - Programming wait functions
 - Programming simple switching functions
 - Programming time-distance functions
- **Using technology packages**
 - Gripper operation with KUKA.GripperTech
 - Gripper programming with KUKA.GripperTech
 - KUKA.GripperTech configuration
- **Working with variables**
 - Displaying and modifying variable values
 - Displaying robot states
- **Variables and declarations**
 - Data management in KRL
 - Working with simple data types
- **Successful programming in KRL**
 - Structure and organization of robot programs
 - Structuring robot programs
 - Linking robot programs
- **Using program execution control functions**
 - Programming conditional statements or branches
 - Programming a switch statement
 - Programming loops
 - Programming wait functions
 - Time- dependent wait functions
 - Signal- dependent wait functions
- **Working with a higher-level controller**
 - Preparation for program start from PLC
 - Adapting the PLC interface (Cell.src)