

COURSE OUTLINES

# UK Robotic Training

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For availability and booking of Scheduled courses, please use the link below.

For more information and booking On-Demand or Onsite courses, please email the training team using the link below.

[Scheduled Course Online Booking](#)

[Email UK Robotics Training](#)

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OUTLINE - ROBOTICS

# IRC5 Operator

## UK R551

### Course Outline

Duration 2 days  
Beneficial for robot operators and maintenance staff  
Instructor led seminar with practical exercises.  
The language of the course is English

### Prerequisites

Not required

### Subject areas:

#### Safety Instructions

Safe working practices  
Emergency stops and recovery  
Enabling device  
Modes of operation and Safety interlocks  
Brake release and Pinch points  
Program reset and Collision awareness

#### System Description

Robot and external mechanical units  
Control system, Operators panel and FlexPendant  
Start-up and Shut-down procedures

#### Program Operation

Starting, stopping and stepwise program operation  
Program Editor and Production windows  
Teach, Test and Production operational modes  
Override speeds  
Continuous & Cycle running modes  
Debug menu

#### Jogging the robot using the joystick

Joint axis and linear jogging  
Tool Re-Orientation  
Coordinate systems  
Jog speed and incremental positioning

#### Event messages and logs

Error identification  
Recovery

#### Modifying a Program

The program Editor  
Move instructions (MoveJ, MoveL)  
Modifying Positions

### Continued:

#### Tool Center Points

Tool center point appreciation

#### Work object coordinates

Workobject appreciation

#### Using Inputs and Outputs

Operating the Input Output window  
Set, Reset and WaitDI Instructions

#### Program Structure appreciation

Routines and program flow  
Debug menu and program reset  
Modules  
Backup and Restore

### Objectives

On completion, participants will be able to perform:  
Safe program operation  
FlexPendant operation  
System start-up, shut-down procedure, and error recovery  
Jog the robot with the Joystick  
Perform program reset  
Modify program positions  
Backup and Restore system information

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OUTLINE - ROBOTICS

# IRC5 Programming and Operation

## UK R552

### Course Outline

Duration 4.5 days

Beneficial to programmers, operators, and maintenance staff

Instructor led seminar with practical exercises.

The language of the course is English

### Prerequisites

Not required

### Subject areas:

#### Safety instructions

Safe working practices

Emergency stops and recovery

Enabling device

Modes of operation and Safety interlocks

Brake release and Pinch points

#### System description

Robot and external mechanical units

Control system, Operators panel and FlexPendant

Start-up and Shut-down procedures

#### Program operation

Starting, stopping and stepwise program operation

The 'Program editor' and 'Production' windows

Manual and Automatic operation

Override speeds

Continuous & Cycle running modes

Debug menu and program reset and collision awareness

#### Jogging the robot using the joystick

Joint axis, Linear and Orientation jogging

Coordinate systems

Jog speed and incremental positioning

#### Programming RAPID

The program Editor

Routines and program flow

Move instructions (MoveJ, MoveL and MoveC)

Editing Speed and Zone data

Modifying positions

Saving Programs

#### Event messages and logs

Error identification and Recovery

#### Tool center points and Work-object coordinate systems

TCP, tool center point, and work-object theory, and definition

### Continued:

#### Logical instructions

Digital Inputs (WaitDI, WaitUntil)

Digital Outputs (Set, Reset, SetDO)

Waiting for time

#### Decision making instructions

Compact IF, IF Then...

While

Test

#### Working with numbers

Increment, Decrement, Clear

Assigning a value

#### FlexPendant messaging instructions

TPWrite, TPErase, TPSHow, TPReadNum, TPReadFK

#### Evaluating cycle times

Clock data, clock instructions and clock reading function

#### Task memory structure

Program and System Modules

Backup and Restore

#### Objectives

On completion, participants will be able to perform:

Safe program operation

FlexPendant operation

System startup, shutdown, and error recovery

Jog the robot with the Joystick

RAPID programming, editing, testing, and reset

Appreciation of basic program structure and flow

Backup and Restore of system information

#### Objectives

On completion, participants will be able to perform:

Safe Operation of the YuMi<sup>®</sup> equipment

Calibrate YuMi arms and Grippers

Jog robot arms using Joystick

Create basic RAPID programs

Program MultiMove Instructions and data

Configure Cameras using RobotStudio's Integrated Vision

Program RAPID code to move robot to a detected object

Program Gripper specific instructions

Measure a contact force using ABB TuneMaster software

Perform a backup of the IRC5 controller

OUTLINE - ROBOTICS

# IRC5 YuMi Programming and Operation

## UK R500

### Course Outline

Duration 4 days

This training is targeted at Integrators / Programmers  
Instructor led seminar with practical exercises.  
The language of the course is English

### Prerequisites

UK R552 IRC5 Programming & Operation is recommended  
but not required

### Subject areas:

#### Safety

Performance levels  
Safe working practices

#### Description and operation of the YuMi®

Product Introduction.  
FlexPendant Navigation & Jogging the YuMi®  
Operate YuMi® system in manual and automatic run mode.

#### RAPID programming

Create simple programs  
Tool Centre Point definition  
Work-object coordinate definition

#### MultiMove

MultiMove concepts  
MultiMove Instructions and data

#### RobotStudio®

Use RobotStudio software to interface with the YuMi®  
Setup camera configuration  
Use Integrated Vision inspection tools  
Program using RAPID code snippets in RobotStudio's text editor

#### Calibration of the Arms and Hands of YuMi®

Understand how to properly calibrate the arms and the hands.

### Continued:

#### Utilize YuMi® specific RAPID code

Gripper Instructions  
Contact Linear

#### TuneMaster software

Measuring contact force during robot motion

#### Understanding YuMi® specific parameters.

Enabling collision error handling

#### Backup system information

Perform a Backup and Restore

#### Objectives

On completion, participants will be able to perform:

Safe Operation of the YuMi® equipment  
Calibrate YuMi arms and Grippers  
Jog robot arms using Joystick and lead-through methods  
Create basic RAPID programs  
Program MultiMove Instructions and data  
Configure Cameras using RobotStudio's Integrated Vision  
Program RAPID code to move robot to a detected object  
Program Gripper specific instructions  
Measure a contact force using ABB TuneMaster software  
Perform a backup of the IRC5 controller

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OUTLINE - ROBOTICS

# IRC5P Programming and Operation (Paint)

## UK R345

### Course Outline

Duration 5 days

Beneficial for robot operators, programmers and maintenance staff working with IRC5P (Paint) robots

Instructor led seminar with practical exercises.

The language of the course is English

### Prerequisites

Knowledge of operating Windows PC beneficial

### Subject areas:

#### Safety Instructions

Safe working practices for programming and operation

Operating controls and indicators on the robot controller

#### Jogging the robot using the joystick

Coordinate systems

Joint axis, linear jogging, and Tool Re-Orientation

#### Programming and Operation

Program Structure

Starting, stopping and stepwise program operation

Programming and editing using the TPU (Teach Pendant Unit)

Basic editing using RobotStudio, ShopFloor Editor and Robview5

Movement instructions

Input and output instructions

PaintWare instructions and data

#### Tool Centre Points

Tool center point definition

#### Work object coordinates

Workobject definition

#### Conveyor Tracking (Optional)

Base-frame definition theory

RAPID Instructions for conveyor tracking

### Objectives

On completion, participants will be able to perform:

Practice all areas of safety as they pertain to the robot

Identify and use the controls necessary for robot operation

Run robot system in manual or automatic modes

Interpret and respond to error codes

Basic programming and editing using the pendant

Operate RobotStudio, ShopFloor Editor and Robview5

Use input and output instructions within a basic program

Use movement instructions within a basic program

Add and use PaintWare functionality in a program

Teach object tracking for moving conveyor

OUTLINE - ROBOTICS

# IRC5 Advanced Programming stage 1

## UK R556

### Course Outline

Duration 4.5 days

Beneficial to Integrators, Programmers, Advanced Operators

Instructor led seminar with practical exercises.

The language of the course is English

### Prerequisites

Students must have attended the UKR552 IRC5 Programming & Operation Course or have an extensive working knowledge of the topics covered

### Subject areas:

#### Safety

#### Complex Tool Center Points and Work-objects

Defining moving and stationary TCP

Definition of Work Objects and Mirroring

#### Optional Arguments

Review Move Instructions and their options

#### Task structure and Module Declarations

Attributes, Load and Unload during execution Local & Global data

#### World coordinate system and World zones

Definition of World co-ordinates and World zones

#### Working with Numbers

Assigning a value to data and Common Numeric Functions

Increment, Decrement and Clearing Values

Checking data or values using "IF" and "TEST"

#### Cycle Timing Instructions

Reset, Start, Stop and reading a clock used for timing

#### Configuration Instructions

Control robot axis configuration during Joint and Linear motion

Interpolation method through Singular Points

#### Positional Functions

Offset / Reltool and reading the current position

#### Searching Instructions

#### Routine Handling

Explanation and Uses of Backwards, Error, and Undo Handling

#### Position Displacement

Activating and deactivating program displacement

Activating program displacement by specifying a value

### Continued:

#### Interrupts and Trap routines

Connecting a variable to a trap routine

Interrupt from a Digital /Analogue Input signals or Time

Activating and deactivating individual interrupts

Enabling all interrupts

Commonly used interrupt Instructions

#### Event Handling

Power on, Start, Restart, Stop, Qstop, Reset

#### Logical Instructions

#### Advanced I/O Instructions

Changing Analogue Output values / Group of Digital Output signals

Waiting and testing for Inputs

Configuration of Group/Binary signals and Cross Connections

#### Fixed Position Events

#### Performance Instructions

Reducing acceleration and overriding or limiting program velocity

Defining and activating payload

Soft Servo and External Axes activation & deactivation

#### Creating Your Own Instructions and Functions

Routine declarations and parameters

#### Messaging Instructions and Functions

#### Objectives

On completion, participants will be able to:

Create and properly use complex tool center points

Define and use work object co-ordinate systems

Define and use world zones

Use numerical data instructions, perform String Manipulation

Use instructions for avoiding singularity areas

Use search, error handling and Program displacement

Use interrupt instructions and trap routines

Use event routines and backward handling

Use Error Handlers and Undo Handlers

Use communication instructions

Use advanced I/O instructions

Use instructions to enhance robot performance

Create basic 'user' instructions and functions

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## OUTLINE - ROBOTICS

# IRC5 Advanced Programming stage 2

## UK R557

### Course Outline

Duration 4 days

Beneficial to Integrators and Programmers of IRC5 robots

Instructor led seminar with practical exercises

The language of the course is English

### Prerequisites

Students must have attended the UKR556 IRC5 Advanced

Programming stage1 course and have ongoing IRC5 experience

### Subject areas:

#### Dot Notation

Accessing Data type parts

Checking robot at home

#### Creating Routines with arguments

Creating instructions with parameters

INOUT, Optional Arguments

Present() Function

Mutually Exclusive Arguments

Global and Local Routines and Data

PERS/VAR

“Present()” Versus “?”

Functions with Parameters

Variables inside Routines

#### Arrays

Creation, Manipulation, Printing, Resetting

In combination with routines and parameters

1, 2 and 3 dimensional arrays

#### Strings

String Concatenation, Manipulation and Functions

8 Bit Hexadecimal ASCII Codes

#### Serial Communication

Reading, Writing & Appending Files

COM Port Communication

#### File Handling

Copying, Renaming and Removing Files

Making, Removing and Opening Directories

Directory Listings

File Handling Functions

### Continued:

#### Socket Messaging

Client and Server configuration

FTP Client, FTP Server, FTP Robot Client configuration

Mounting an FTP Network Drive

#### MultiTasking

General Description, Creating a parallel program

System parameter setting, Task Data

Synchronizing using a common variable, Interrupt, and dispatcher

Common data in several tasks

Teach pendant messages from parallel tasks

#### NFS Client

NFS Server and Robot Client Configuration

Mounting an NFS Network Drive

### Objectives

On completion, participants will be able to perform:

Demonstrate the techniques of advanced programming

Use Dot notation

Create instructions and functions to suit any purpose

Create and manipulate Arrays

Manipulate Strings

Communicate using Serial Channels

Handle Files and Directories

Utilise MultiTasking to create and program Background tasks

Socket Messaging for Client and Server configurations

Configure the robot to communicate with an FTP Server

Configure the robot to communicate with an NFS Server

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OUTLINE - ROBOTICS

# IRC5 MAG Process and ArcWare Programming

## UK R565

### Course Outline

Duration 2 days

Beneficial for robot operators, programmers, and maintenance staff

Instructor led seminar with practical exercises

The language of the course is English

### Prerequisites

Students must have attended either the UK R551 IRC5 Operator or UK R552 IRC5 Programming and Operation

### Subject areas:

#### Safety Instructions

Safe working practices when operating a welding robot

#### MAG welding process

Short circuit, spray, pulse, rapid arc and, CMT

Optimum weld settings

Synergic and non-synergic settings

Approach angles, Weld geometry.

Weld quality and fault recognition

#### ArcWare Programming and editing

Welding Instructions, ArcL and ArcC

Seam, Weld and Weave data

#### Tool Calibration

Tool data theory

TCP setup and quick-check using ABB Bullseye equipment

Operate Torch Service Centre, cleaning / wire cutting (if used)

#### Manual functions

Gas purge and wire feed

Process Blocking

Weld and weave tuning

#### External Axis

Base frame calibration

Programming Coordinated motion with robot and rotary positioner

#### Objectives

On completion, participants will be able to perform:

Setting up of weld equipment

Programming of weld Instructions and parameters

Safe Operation of welding robot

Recognition and correction of weld defects

Bullseye and torch service operation

Calibrate external axis positioner

Program robot and positioner coordinated motion



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OUTLINE - ROBOTICS

# IRC5 Electrical Maintenance

## UK R555

### Course Outline

Duration 3 days

Beneficial for robot service engineers and electrical maintenance personnel

Instructor led seminar with practical exercises

The language of the course is English

### Prerequisites

UK R551 IRC5 Operator or UK R552 IRC5 Programming & Operation

Delegates must be electrically competent

### Subject areas:

#### Safety Instructions

Electrical Safety

Emergency stops

Enabling device

Modes of operation and Safety interlocks

Brake release and Pinch points

Program reset and Collision awareness

#### System Description

Robot and external mechanical units

Control system, Operators panel and FlexPendant

Start up and Shut down procedures

Backup and Restore system information

#### Event messages and logs

Error identification

Recovery

#### RobotStudio

Connecting PC to online robot

Building robot operating systems

Starting the boot-server application

Downloading operating system to robot controller

Advanced restart options

Setting up 'User Authorisation System'

#### Continued:

#### Servo System

Drive system components

Fault finding on drives

#### Computer System

Computer unit components

Fault finding on computer

#### Safety chains

Safety chain components

Fault finding on safety run-chain

#### Calibration

Robot calibration methods

Measurement system

Fault finding exercises

#### I/O system

Configuring Input/Output parameters

ABB DeviceNet cards and addressing

Cross connections

#### Objectives

On completion, participants will be able to perform:

Trouble shooting

Preventative maintenance procedures

Restart Procedures

RobotStudio Online connection

Install RobotWare operating system

Backup and Restore system information

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OUTLINE - ROBOTICS

# Fieldbus

## UK R600

### Course Outline

Duration 3 days

Instructor led seminar with practical exercises.

The language of the course is English

### Prerequisites

Students must have attended the UKR551 IRC5 Operator or UK R552 Programming and Operation course

### Subject areas:

#### Fieldbus Expressions

Master/Slave etc.

#### Computer Connections

LAN/WAN etc.

AnyBus Devices

PCIe Profibus/DeviceNet Cards

#### Signal Definitions

#### DeviceNet

DeviceNet components

Cable lengths/Baud Rates/Termination

Connection Types

ABB Standard Boards and configuration files

Configuring a WAGO DeviceNet Coupler

Configuring a DeviceNet AnyBus Adapter

#### EtherNet/IP

CIP Routing

Intended use of WAN and LAN ports

EtherNet/IP on different networks

Configuring an EtherNet/IP AnyBus Adapter

Configuring a WAGO EtherNet/IP Coupler

EDS Files

IRC5 new local I/O modules

### Continued:

#### Profinet

Profinet Overview

RobotStudio IO Configurator

Configuring a Profinet AnyBus Adapter

Configuring a WAGO Profinet Coupler

#### Profibus

Profibus Cables/Connectors/Speeds/Termination

Softing Profibus Configurator

Configuring a Profibus AnyBus Adapter

Configuring a WAGO Profibus Coupler

### Review and Summary

#### Objectives

On completion, participants will be able to perform:

Configuration of the ABB IRC5 officially supported Fieldbuses.

OUTLINE - ROBOTICS

# OmniCore Single Arm YuMi Programming and Operation

## UK R650

### Course Outline

Duration 4 days

This training is targeted at Integrators / Programmers  
Instructor led seminar with practical exercises.

The language of the course is English

### Prerequisites

UK R652 OmniCore Basic Programming & Operation is recommended but not required

### Subject areas:

#### Safety

Performance levels  
Safe working practices

#### Description and operation of the YuMi®

Product Introduction.  
FlexPendant Navigation & Jogging the YuMi®  
Operate YuMi® system in manual and automatic run mode.

#### RAPID programming

Create simple programs  
Tool Centre Point definition  
Workobject coordinate definition

#### RobotStudio®

Use RobotStudio software to interface with the YuMi®  
Setup camera configuration  
Use Integrated Vision inspection tools  
Program using RAPID code snippets in RobotStudio's text editor

#### Continued:

##### Calibration of the Arm and Hand of YuMi®

Understand how to properly calibrate the arms and the hands.

##### Utilize YuMi® specific RAPID code

Gripper Instructions  
Contact Linear

##### TuneMaster software

Measuring contact force during robot motion

##### Understanding YuMi® specific parameters.

Enabling collision error handling

##### Backup system information

Perform a Backup and Restore

#### Objectives

On completion, participants will be able to perform:

Safe Operation of the YuMi® equipment  
Calibrate YuMi arm and Gripper  
Jog robot arm using Joystick and lead-through methods  
Create basic RAPID programs  
Configure Cameras using RobotStudio's Integrated Vision  
Program RAPID code to move robot to a detected object  
Program Gripper specific instructions  
Measure a contact force using ABB TuneMaster software  
Perform a backup of the OmniCore controller

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## OUTLINE - ROBOTICS

# RobotStudio Online

## UK R5590

### Course Outline

Duration 2 days

Beneficial to Maintenance Engineers and Programmers who require the fundamental knowledge of working with RobotStudio's Online non-licensed features  
Instructor led seminar with practical exercises.

The language of the course is English

**This course does not include the following features: SafeMove configuration, Integrated vision, conveyor tracking.**

### Prerequisites

Students must have experience with Microsoft Windows and completion of an ABB robot programming course

### Subject areas:

#### RobotStudio Online Overview

Introduction to RobotStudio's non-licensed features  
Downloading and Installing RobotStudio & RobotWare  
Exploring RobotStudio tabs, ribbons, and browsers  
Licensing options

#### Connecting RobotStudio to robot controller

Methods of connection  
Write access  
Authenticate, managing users and grants

#### Controller Tools

Methods of restarting the controller  
Backup and Restore  
Event messages  
File Transfer  
FlexPendant viewer  
Online Monitor

#### Operating Inputs / Outputs

View status and changing output value  
Simulating signals

### Continued:

#### Configuration

Robot Parameters  
Adding and editing Input and Output signals  
Upgrading robot operating system software

#### Rapid Editor

Text editing  
Comparing files  
Using Rapid reference help files

#### Test and Debugging

Methods of program execution  
Using Breakpoints

#### Path data & Path editor

Viewing path data and adjusting values  
Graphically viewing path and adjusting values

#### Virtual Robot

Build a station with virtual controller  
Virtual FlexPendant  
Basic simulation tools

#### Objectives

On completion, participants will be able to perform:

Download RobotWare software onto PC  
Connection of RobotStudio to Robot controller  
Installation of robot operating system  
Create User Authorisation  
Backup and restore system information  
Basic Rapid editing  
Creation of virtual robot from real robot backup

OUTLINE - ROBOTICS

# RobotStudio Offline Programming

## Stage 1

### UK R5591

#### Course Outline

Duration 4.5 days

Beneficial to Programmers / integrators who require the fundamental knowledge of working with RobotStudio.

Instructor led seminar with practical exercises.

The language of the course is English

#### Prerequisites

Students must have experience with Microsoft Windows and completion of UK R552 IRC5 Programming and Operation course

#### Subject areas:

##### RobotStudio Basics

Configure user Library and Geometry galleries  
Help menu, Exploring Views, Tabs, Ribbons  
Navigating the graphics window; pan, zoom and rotate  
Selection levels and snap modes  
Methods of creating a new station  
Importing robots, attaching tools and moving CAD files  
Creating a workobject coordinate system  
Programming Motions and setting axis configuration  
Setup and Run a Simulation  
Saving a robot program  
Modifying geometries Local Origin  
Creating a Tool with TCP from geometry  
Moving Robots Task Frame (Robot World Coordinate)

##### Zone Data Visualization

Turning on visual zones and automatic reduction of zones  
Setting up Asymmetrical zones

##### Graphical Programming

Creating Paths automatically from Curves and Edges  
Target manipulation and setting axis configurations  
Collision detections and evaluating reach

##### Signal Analyzer

Signal setup and analyzing  
Performance tuning and data export

#### Continued:

##### Modelling

Creating mechanisms  
Mirroring part geometries, Mirror paths

##### Programming and Simulating IO signals

Setup a simulation from a robot backup  
Working with Smart Components and the RAPID editor  
Adding Action Instructions (Logic)  
Station Logic setup  
Configure simulation settings

##### Transfer

Open and edit program modules  
Restoring a Backup file, Comparing and transferring data

##### External Axes

Setting up a Track simulation  
Setting up a Positioner simulation

##### Sales tools

Enhancing a station's graphic appearance  
Adding and moving to graphical viewpoints  
Managing simulation events  
Recording a movie  
Record simulation to Station Viewer.exe file  
Exporting views as 2D drawing

##### Objectives

On completion, participants will be able to perform:

Create a RobotStudio Station  
Perform offline programming  
Optimize Zone data  
Create a Simulation  
Analyze signals  
Basic modelling  
Transfer RAPID code to robot  
Program External axis

OUTLINE - ROBOTICS

# RobotStudio Offline Programming

## Stage 2

UK R5592

### Course Outline

Duration 4 days

Beneficial to Programmers / Integrators who require further knowledge of working with RobotStudio.

Instructor led seminar with practical exercises.

The language of the course is English

### Prerequisites

Completion of UK R5591 RobotStudio Offline Programming stage 1 course

### Subject areas:

#### Revision of RobotStudio stage 1

Setting up and track simulation

#### Event Manager

Adding Events: I/O Connections, I/O signals changed

Simulation events

#### Smart components

Create smart components In-feeder, vacuum gripper, out-pallet

Complete a simulation using smart components

#### MultiMove

Concepts

Building a MultiMove station

Programming MultiMove using Wizard

Changing the MultiMove motion behavior

#### Mechanisms

Create a gripper tool mechanism

Turn gripper mechanism into a Smart component

Use gripper in a station

Create a complex external axis mechanism

### Continued:

#### Conveyor Tracking

Conveyor setup

Programming the robot to track parts moving along the conveyor

Running the simulation

Change conveyor speed and the start window

Adding a second robot to the station

#### ScreenMaker

Prepare the station

Open and configure a new ScreenMaker project

Design and test the main screen Production tab

Design and test the main screen Service tab

Design and configure a gripper screen

Design and configure a conveyor screen

#### Layout Tools

Configure and export 2D drawings from station views

#### Physics

Flexible cables and hoses

Changing the Physics behavior of station geometries

Create a joint mechanism

Setup a simulation combining physics cables with physics joints

Gravity and Friction

### Course Objectives

On completion, participants will be able to:

Use simulation events

Create smart components

Program a MultiMove simulation

Create complex mechanisms

Setup and program conveyor tracking

Create FlexPendant custom screens using ScreenMaker

Export 2D drawings from the station

Use physics within simulations

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OUTLINE - ROBOTICS

# RobotStudio ArcWeld PowerPac 1

## UK R5593

### Course Outline

Duration 2 days

Beneficial to Programmers / integrators who require the fundamental knowledge of working with RobotStudio ArcWeld PowerPac 1.

Instructor led seminar with practical exercises.

The language of the course is English

### Prerequisites

Students must have experience with Microsoft Windows and prior completion of a RobotStudio course

### Subject areas:

#### Learning the Basics of the ArcWeld PowerPac

PowerPac Interface

#### Working with basic AWPP functions

Create a New Station and System

Creating a New Part Program

Data Manager and Templates

Programming Welds

Simulating Open Paths

Adding Additional Welds and Air Moves

Adding Service Procedures

Creating the Robot Program

Test Running the Program with Production Screen

#### Advanced Features

Working with multiple robots and positioners

Creating the System and Station

Importing a Process Template

Programming Welds in Multiple Tasks

Manipulating Process Paths

Removing and Adding Process to a Path

#### Objectives

On completion, participants will be able to perform:

Create Virtual System and RobotStudio station

Create new part programs using 'Production Manager'

Program weld paths using the ArcWeld PowerPac 1

Simulate graphical paths and synchronize to RAPID code

Program Multiple robots with positioner

OUTLINE - ROBOTICS

# IRC5 SafeMove 1<sup>st</sup> Generation

## UK R569

### Course Outline

Duration 2 days

Beneficial to Integrators, Programmers and maintenance staff

Instructor led seminar with practical exercises.

The language of the course is English

### Prerequisites

Students must have attended the UK R552 IRC5 Programming and Operation Course or have an extensive working knowledge of the topics covered.

Attendance of the IRC5 Advanced Stage 1 course is advantageous.

### Subject areas

#### Overview

SafeMove 1<sup>st</sup> generation Hardware

General functions

Category 1 and 0 Safety Stops

#### Active Functions

Safe Stand Still

Safe Axis Speed

Safe Axis Range

Safe Tool Speed

Safe Tool Zone

Support Functions

#### Passive Functions

Monitor Axis Range

Monitor Stand Still

Monitor Tool Zone

#### Support Functions

Cyclic Brake check

Safe Brake Ramp

#### Synchronization

Synchronization Switch (Single & Dual Channel)

Software Synchronization

PreWarning

### Continued:

#### EIO Configuration

Virtual Board

Cross Connections

Antivalent & Equivalent Signals

#### RobotStudio

UAS Configuration

EIO Configuration

Safety Configuration

Tool Zone Visualizer Add-in

### Objectives

On completion, participants will be able to perform:

SafeMove Install and Configuration

Synchronization

Recovery from Safety Violations



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OUTLINE - ROBOTICS

# IRC5 SafeMove 2

## UK R5692

### Course Outline

Duration 3 days

Beneficial to Integrators, Programmers, and maintenance staff

Instructor led seminar with practical exercises.

The language of the course is English

### Prerequisites

Students must have attended the UK R552 IRC5 Programming and Operation Course or have an extensive working knowledge of the topics covered.

Attendance of the IRC5 Advanced Stage 1 course is advantageous.

### Subject areas:

#### Overview

Hardware

Safety IO Setup

Function Mapping

Pre and Post Logic

Stop Configurations

General Output

Keyless Option

Checksums

#### Safety Functions

Managing Safety Configurations

Tool and Arm Configurations

Safe Zones

Safety Functions

Safe Ranges

Track Configuration

Contact Application

### Continued:

#### Support Functions

Cyclic Brake check

Safe Brake Ramp

#### Safety Violation

Violation Recovery

#### Synchronization

Synchronization Switch

Software Synchronization

Pre-warning Signal

#### RobotStudio

UAS Configuration

EIO Configuration

SafeMove Visualizer

IO Configurator

#### Objectives

On completion, participants will be able to perform:

SafeMove Installation and Configuration

Synchronization

Recovery from Safety Violations

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OUTLINE - ROBOTICS

# IRC5 EPS Electronic Position Switches

## UK R568

### Course Outline

Duration 1 days  
Beneficial to Integrators, Programmers and maintenance staff  
Instructor led seminar with practical exercises.  
The language of the course is English

### Prerequisites

Students must have attended the UK R552 IRC5 Programming and Operation Course or have an extensive working knowledge of the topics covered.  
Attendance of the IRC5 Advanced Stage 1 course is advantageous.

### Subject areas

#### Overview

Hardware  
General functions

#### Passive Functions

Monitor Axis Range

#### Support Functions

Cyclic Brake check  
Safe Brake Ramp

#### Synchronization

Synchronization Switch (Single & Dual Channel)  
Software Synchronization  
PreWarning

#### EIO Configuration

Virtual Board  
Cross Connections

#### RobotStudio

UAS Configuration  
EIO Configuration  
Safety Configuration

#### Objectives

On completion, participants will be able to perform:

EPS Installation and Configuration  
Synchronization

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## OUTLINE - ROBOTICS

# OmniCore Programming and Operation

## UK R752

### Course Outline

Duration 4.5 days

Beneficial to programmers, operators, and maintenance staff

Instructor led seminar with practical exercises.

The language of the course is English

### Prerequisites

Basic PC knowledge and a technical background

### Course Goal

The participant after completion should be able to create, test and optimize a simple, structured pick and place and path following applications.

### Student profile

This course is the first step to become a robot programmer and for personnel with a need to modify existing programs

### Subject areas:

Health & Safety

Introduction to OmniCore and ABB robots

Jogging the robot with the joystick

Basic Move-instructions

Program structure (Datatypes, Instructions, Routines, Modules)

Revolution counters

Tool center point definition

Work-objects coordinate definition

Saving data (Program, Backup, Diagnostics)

Create a Virtual Controller

RobotStudio RAPID editor

I/O- instructions

Most common instructions and program logic

Most common functions

Configuring FlexPendant Dashboards

### Course objectives

Upon completion of this course, the student will:

Have a basic knowledge about the mechanics of ABB robots

Be able to jog the robot both linear, reoriented and axis-by axis

Be able to structure a program using routines and modules

Understand the difference between Task and Program

Be able to program basic movements

Be able to update the revolution counters

Be able to create and define tooldata

Be able to create and define wobjdata

Be able to save programs and backup the system

Be able to create a virtual copy of a real controller

Be able to use RobotStudio for editing the robot program both online and offline

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OUTLINE - ROBOTICS

# Mechanical Maintenance

## UK R755

### Course Outline

Duration 3-5 days depending on mechanical unit  
Please enquire for availability of specific robot types  
Beneficial for staff responsible for robot maintenance  
Instructor led seminar with practical exercises.  
The language of the course is English

### Prerequisites

Students must have attended the UKR551 IRC5 Operator or  
UK R552 Programming and Operation course

### Subject areas:

#### Safety Instructions

Emergency stops  
Safety & Overview  
Introduction  
Documentation  
Mechanical manipulator overview  
Safety  
Special tools

#### Strip Down and Re-assemble

Motor removal and replacement  
Complete wrist change  
Upper arm removal and complete strip down  
Lower arm removal  
Cable harness removal

#### Maintenance

Preventative maintenance schedule & routines  
Lubrication requirements  
Practical exercises in maintenance & faultfinding

#### Service

Review of programming techniques  
Possible failure points  
Re-calibration procedures

#### Review and Summary

### Objectives

On completion, participants will be able to perform:

Understand Mechanical repair and component replacement  
Understanding of internal robot workings  
Preventative maintenance procedures

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OUTLINE - ROBOTICS

# PickMaster 3

## UK R756

### Course Outline

Duration 4 days

Beneficial to Programmers / integrators who need to configure PickMaster 3 software

Instructor led seminar with practical exercises.

The language of the course is English

### Prerequisites

Prior attendance of UKR552 IRC5 Programming and Operation and an operational knowledge of Microsoft windows is required, attendance of UKR556 IRC5 Advanced Programming Stage 1 will be beneficial

### Subject areas:

#### Safety Instructions

Safe working practices  
Emergency stops and recovery  
Enabling device  
Modes of operation  
Program reset

#### System Description

Robot and external mechanical units  
Control system, Operators panel and FlexPendant  
Startup and Shutdown procedures  
PickMaster 3

#### Installation and Commissioning

Camera Set-up & Calibration  
Conveyor Tracking  
Conveyor Base-frame Set-up  
Fixed Index Work Area Set-up  
Vision Set-up  
Defining new products  
How to set up ATC and Load Balance project

#### Objectives

On completion, participants will be able to perform:

Safe robot operation  
Set-up a System  
Build a Line and Project with PickMaster  
Configure products with PickMaster  
Test & Tune for running a product

OUTLINE - ROBOTICS

# IRC5 Operator with FlexLoader Vision

## UK R5512

### Course Outline

Duration 5 days

Beneficial for robot operators and maintenance staff

Instructor led seminar with practical exercises.

The language of the course is English

### Prerequisites

Not required

### Subject areas:

#### Safety Instructions

Safe working practices

Emergency stops and recovery

Enabling device

Modes of operation and Safety interlocks

Brake release and Pinch points

Program reset and Collision awareness

#### System Description

Robot and external mechanical units

Control system, Operators panel and FlexPendant

Startup and Shutdown procedures

#### Program Operation

Starting, stopping and stepwise program operation

The program Editor and Production windows

Teach, Test and Production operational modes

Override speeds

Continuous & Cycle running modes

Debug menu

#### Jogging the robot using the joystick

Joint axis and linear jogging

Tool Re-Orientation

Coordinate systems

Jog speed and incremental positioning

#### Event messages and logs

Error identification

Recovery

### Continued:

#### Modifying a Program

The program Editor

Move instructions (MoveJ, MoveL)

Modifying Positions

#### Tool Centre Points

Tool center point Definition

#### Work object coordinates

Workobject Definition

#### Using Inputs and Outputs

Operating the Input Output window

Set, Reset and WaitDI Instructions

#### Program Structure appreciation

Routines and program flow

Debug menu and program reset

Modules, Backup and Restore

#### FlexVision

'Teachin' Details

#### Objectives

On completion, participants will be able to perform:

Safe program operation

FlexPendant operation

System startup, shutdown and error recovery

Jog the robot with the Joystick

Perform program reset

Modify program positions

Backup and Restore system information

Teachin Details

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## OUTLINE - ROBOTICS

# IRC5 Operator

## UK R551v (Virtual class)

### Course Outline

Duration 2 days

Beneficial for robot operators and maintenance staff

Instructor led online seminar with practical exercises.

The language of the course is English

### Prerequisites

Students must have experience using Microsoft Windows.

Each Student will require a computer with Internet connection.

Headset with microphone and webcam is preferable

RobotStudio installed preferably with premium or trial license.

RobotWare 6 will also need to be installed.

[RobotStudio download link](#)

### Subject areas:

#### Safety Instructions

Safe working practices

Emergency stops and recovery

Enabling device

Modes of operation and Safety interlocks

Brake release and Pinch points

Program reset and Collision awareness

#### System Description

Robot and external mechanical units

Control system, Operators panel and FlexPendant

Start-up and Shut-down procedures

#### Program Operation

Starting, stopping and stepwise program operation

Program Editor and Production windows

Teach, Test and Production operational modes

Override speeds

Continuous & Cycle running modes

Debug menu

#### Jogging the robot using the joystick

Joint axis and linear jogging

Tool Re-Orientation

Coordinate systems

Jog speed and incremental positioning

### Continued:

#### Event messages and logs

Error identification

Recovery

#### Modifying a Program

The program Editor

Move instructions (MoveJ, MoveL)

Modifying Positions

#### Tool Center Points

Tool center point appreciation

#### Work object coordinates

Workobject appreciation

#### Using Inputs and Outputs

Operating the Input Output window

Set, Reset and WaitDI Instructions

#### Program Structure appreciation

Routines and program flow

Debug menu and program reset

Modules

Backup and Restore

#### Objectives

On completion, participants will be able to perform:

Safe program operation

FlexPendant operation

System start-up, shut-down procedure, and error recovery

Jog the robot with the Joystick

Perform program reset

Modify program positions

Backup and Restore system information

OUTLINE - ROBOTICS

# IRC5 Programming and Operation

## UK R552v (Virtual class)

### Course Outline

Duration 4 days

Beneficial to programmers, operators, and maintenance staff

Instructor led seminar with practical exercises.

The language of the course is English

### Prerequisites

Students must have experience using Microsoft Windows.

Each Student will require a computer with Internet connection.

Headset with microphone and webcam is preferable

RobotStudio installed preferably with premium or trial license.

RobotWare 6 will also need to be installed.

[RobotStudio download link](#)

### Subject areas:

#### Safety instructions

Safe working practices

Emergency stops and recovery

Enabling device

Modes of operation and Safety interlocks

Brake release and Pinch points

#### System description

Robot and external mechanical units

Control system, Operators panel and FlexPendant

Start-up and Shut-down procedures

#### Program operation

Starting, stopping and stepwise program operation

The 'Program editor' and 'Production' windows

Manual and Automatic operation

Override speeds

Continuous & Cycle running modes

Debug menu and program reset and collision awareness

#### Jogging the robot using the joystick

Joint axis, linear and orientation jogging

Coordinate systems, Jog speed and incremental positioning

#### Event messages and logs

Error identification and Recovery

### Continued:

#### Programming RAPID

The program Editor

Routines and program flow

Move instructions (MoveJ, MoveL and MoveC)

Editing Speed and Zone data

Modifying positions

Saving Programs

#### Tool center points and Work-object coordinate systems

TCP, tool center point, and work-object theory, and definition

#### Logical instructions

Digital Inputs (WaitDI, WaitUntil)

Digital Outputs (Set, Reset, SetDO)

Waiting for time

#### Decision making instructions

Compact IF, IF Then...

While

Test

#### Working with numbers

Increment, Decrement, Clear

Assigning a value

#### FlexPendant messaging instructions

TPWrite, TPErase, TPSHow, TPReadNum, TPReadFK

#### Evaluating cycle times

Clock data, clock instructions and clock reading function

#### Task memory structure

Program and System Modules, Backup and Restore

### Objectives

On completion, participants will be able to perform:

Safe program operation

FlexPendant operation

System startup, shutdown, and error recovery

Jog the robot with the Joystick

RAPID programming, editing, testing, and reset

Appreciation of basic program structure and flow

Backup and Restore of system information



OUTLINE - ROBOTICS

# IRC5 Advanced Programming stage 1

## UK R556v (Virtual class)

### Course Outline

Duration 4.5 days

Beneficial to Integrators, Programmers, Advanced Operators

Instructor led online seminar with practical exercises.

The language of the course is English

### Prerequisites

Students must have attended the UK R552 IRC5 Programming and Operation course or have an extensive working knowledge of the topics covered. Each Student will require a computer with Internet connection. Headset with microphone and have experience using Microsoft Windows.

RobotStudio with RobotWare 6 will need to be installed and either a premium or trial license active. [RobotStudio download link](#)

### Subject areas:

#### Safety

##### Complex Tool Center Points and Work-objects

Defining moving and stationary TCP, Work Objects and Mirroring

##### Optional Arguments

Review Move Instructions and their options

##### Task structure and Module Declarations

Attributes, Load and Unload during execution Local & Global data

##### World coordinate system and World zones

Definition of World co-ordinates and World zones

##### Working with Numbers

Assigning a value to data and Common Numeric Functions

Checking data or values using "IF" and "TEST"

##### Cycle Timing Instructions

##### Configuration Instructions

Control robot axis configuration during Joint and Linear motion

Interpolation method through Singular Points

##### Positional Functions

##### Searching Instructions

##### Routine Handling

Explanation and Uses of Backwards, Error, and Undo Handling

##### Position Displacement

Methods of activating and deactivating program displacement

### Continued:

#### Interrupts and Trap routines

Connecting a variable to a trap routine

Interrupt from a Digital /Analogue Input signals or Time

Activating and deactivating individual interrupts

Enabling all interrupts, Commonly used interrupt Instructions

#### Event Handling

Power on, Start, Restart, Stop, Qstop, Reset

#### Logical Instructions

##### Advanced I/O Instructions

Changing Analogue Output values / Group of Digital Output signals

Waiting and testing for Inputs

Configuration of Group/Binary signals and Cross Connections

##### Fixed Position Events

##### Performance Instructions

Reducing acceleration and overriding or limiting program velocity

Defining and activating payload

Soft Servo and External Axes activation & deactivation

##### Creating Your Own Instructions and Functions

Routine declarations and parameters

##### Messaging Instructions and Functions

#### Objectives

On completion, participants will be able to:

Create and properly use complex tool center points

Define and use work object co-ordinate systems

Define and use world zones

Use numerical data instructions, perform String Manipulation

Use instructions for avoiding singularity areas

Use search, error handling and Program displacement

Use interrupt instructions and trap routines

Use event routines and backward handling

Use Error Handlers and Undo Handlers

Use communication instructions

Use advanced I/O instructions

Use instructions to enhance robot performance

Create basic 'user' instructions and functions

OUTLINE - ROBOTICS

# RobotStudio Offline Programming

## Stage 1

### UK R5591v (Virtual Class)

#### Course Outline

Duration 4.5 days

Beneficial to Programmers / integrators who require the fundamental knowledge of working with RobotStudio.

Instructor led seminar with practical exercises.

The language of the course is English

#### Prerequisites

Students must have experience with Microsoft Windows and completion of UK R552 IRC5 Programming and Operation course  
Each Student will require a computer with Internet connection.

Headset with microphone

RobotStudio 2022.x installed with premium, educational, or trial license.

RobotWare 6.15 and 7.8 or newer will also need to be installed.

[RobotStudio download link](#)

#### Subject areas:

#### RobotStudio Basics

Configure user Library and Geometry galleries

Help menu, Exploring Views, Tabs, Ribbons

Navigating the graphics window; pan, zoom and rotate

Selection levels and snap modes

Methods of creating a new station

Importing robots, attaching tools and moving CAD files

Creating a workobject coordinate system

Programming Motions and setting axis configuration

Setup and Run a Simulation

Saving a robot program

Modifying geometries Local Origin

Creating a Tool with TCP from geometry

Moving Robots Task Frame (Robot World Coordinate)

#### Zone Data Visualization

Turning on visual zones and automatic reduction of zones

Setting up Asymmetrical zones

#### Graphical Programming

Creating Paths automatically from Curves and Edges

Target manipulation and setting axis configurations

Collision detections and evaluating reach

#### Continued:

Signal Analyzer

Signal setup and analyzing

Performance tuning and data export

#### Modelling

Creating mechanisms

Mirroring part geometries, Mirror paths

#### Programming and Simulating IO signals

Setup a simulation from a robot backup

Working with Smart Components and the RAPID editor

Adding Action Instructions (Logic)

Station Logic setup

Configure simulation settings

#### Transfer

Open and edit program modules

Restoring a Backup file, Comparing and transferring data

#### External Axes

Setting up a Track simulation

Setting up a Positioner simulation

#### Sales tools

Enhancing a station's graphic appearance

Adding and moving to graphical viewpoints

Managing simulation events

Recording a movie

Record simulation to Station Viewer.exe file

Exporting views as 2D drawing

#### Objectives

On completion, participants will be able to perform:

Create a RobotStudio Station

Perform offline programming

Optimize Zone data

Create a Simulation

Analyze signals

Basic modelling

Transfer RAPID code to robot

Program External axis

OUTLINE - ROBOTICS

# RobotStudio Offline Programming

## Stage 2

### UK R5592v (Virtual Class)

#### Course Outline

Duration 4 days

Beneficial to Programmers / Integrators who require further knowledge of working with RobotStudio.

Instructor led online seminar with practical exercises.

The language of the course is English

#### Prerequisites

Completion of UK R5591 RobotStudio Offline Programming stage 1 course

Students must have experience using Microsoft Windows.

Each Student will require a computer with Internet connection.

Headset with microphone

RobotStudio 2022.x installed with premium or trial license.

RobotWare 6.15 and 7.8 or newer will also need to be installed.

[RobotStudio download link](#)

#### Subject areas:

#### Revision of RobotStudio stage 1

Setting up and track simulation

#### Event Manager

Adding Events: I/O Connections, I/O signals changed

Simulation events

#### Smart components

Create smart components In-feeder, vacuum gripper, out-pallet

Complete a simulation using smart components

#### MultiMove

Concepts

Building a MultiMove station

Programming MultiMove using Wizard

Changing the MultiMove motion behavior

#### Mechanisms

Create a gripper tool mechanism

Turn gripper mechanism into a Smart component

Use gripper in a station

Create a complex external axis mechanism

#### Continued:

#### Conveyor Tracking

Conveyor setup

Programming the robot to track parts moving along the conveyor

Running the simulation

Change conveyor speed and the start window

Adding a second robot to the station

#### ScreenMaker

Prepare the station

Open and configure a new ScreenMaker project

Design and test the main screen Production tab

Design and test the main screen Service tab

Design and configure a gripper screen

Design and configure a conveyor screen

#### Layout Tools

Configure and export 2D drawings from station views

#### Physics

Flexible cables and hoses

Changing the Physics behavior of station geometries

Create a joint mechanism

Setup a simulation combining physics cables with physics joints

Gravity and Friction

#### Course Objectives

On completion, participants will be able to:

Use simulation events

Create smart components

Program a MultiMove simulation

Create complex mechanisms

Setup and program conveyor tracking

Create FlexPendant custom screens using ScreenMaker

Export 2D drawings from the station

Use physics within simulations

OUTLINE - ROBOTICS

# IRC5 SafeMove 2

## UK R5692v (Virtual class)

### Course Outline

Duration 3 days

Beneficial to Integrators, Programmers, and maintenance staff

Instructor led online seminar with practical exercises.

The language of the course is English

### Prerequisites

Students must have attended the UK R552 IRC5 Programming and Operation Course or have an extensive working knowledge of the topics covered. Attendance of the IRC5 Advanced Stage 1 course is advantageous.

Each Student will require a computer with Internet connection.

Headset with microphone and have experience using Microsoft Windows.

RobotStudio with RobotWare 6 will need to be installed and either a premium or trial license active.

[RobotStudio download link](#)

### Subject areas:

#### Overview

Hardware

Safety IO Setup

Function Mapping

Pre and Post Logic

Stop Configurations

General Output

Keyless Option

Checksums

#### Safety Functions

Managing Safety Configurations

Tool and Arm Configurations

Safe Zones

Safety Functions

Safe Ranges

Track Configuration

Contact Application

#### Support Functions

Cyclic Brake check

Safe Brake Ramp

### Continued:

#### Safety Violation

Violation Recovery

#### Synchronization

Synchronization Switch

Software Synchronization

Pre-warning Signal

#### RobotStudio

UAS Configuration

EIO Configuration

SafeMove Visualizer

IO Configurator

#### Objectives

On completion, participants will be able to perform:

SafeMove Installation and Configuration

Synchronization

Recovery from Safety Violations

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## OUTLINE - ROBOTICS

# IRC5 Operator with FlexLoader Vision UK R5512v (Virtual class)

### Course Outline

Duration 5 days

Beneficial for robot operators and maintenance staff

Instructor led seminar with practical exercises.

The language of the course is English

### Prerequisites

Students must have experience using Microsoft Windows.

Each Student will require a computer with Internet connection.

Headset with microphone

RobotStudio 2022.x installed with premium or trial license.

RobotWare 6 will also need to be installed.

[RobotStudio download link](#)

### Subject areas:

#### Safety Instructions

Safe working practices

Emergency stops and recovery

Enabling device

Modes of operation and Safety interlocks

Brake release and Pinch points

Program reset and Collision awareness

#### System Description

Robot and external mechanical units

Control system, Operators panel and FlexPendant

Startup and Shutdown procedures

#### Program Operation

Starting, stopping and stepwise program operation

The program Editor and Production windows

Teach, Test and Production operational modes

Override speeds

Continuous & Cycle running modes

Debug menu

#### Jogging the robot using the joystick

Joint axis and linear jogging

Tool Re-Orientation

Coordinate systems

Jog speed and incremental positioning

### Continued:

#### Event messages and logs

Error identification

Recovery

#### Modifying a Program

The program Editor

Move instructions (MoveJ, MoveL)

Modifying Positions

#### Tool Centre Points

Tool center point Definition

#### Work object coordinates

Workobject Definition

#### Using Inputs and Outputs

Operating the Input Output window

Set, Reset and WaitDI Instructions

#### Program Structure appreciation

Routines and program flow

Debug menu and program reset

Modules, Backup and Restore

#### FlexVision

'Teachin' Details

#### Objectives

On completion, participants will be able to perform:

Safe program operation

FlexPendant operation

System startup, shutdown and error recovery

Jog the robot with the Joystick

Perform program reset

Modify program positions

Backup and Restore system information

Teachin Details

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## OUTLINE - ROBOTICS

# OmniCore Programming and Operation UK R752v (Virtual class)

### Course Outline

Duration 4.5 days

Beneficial to programmers, operators, and maintenance staff

Instructor led seminar with practical exercises.

The language of the course is English

### Prerequisites

Students must have experience using Microsoft Windows.

Each Student will require a computer with Internet connection. Headset with microphone

RobotStudio 2022.x installed and preferably with premium or trial license.

RobotWare 7.8 or newer and OmniCore FlexPendant application will also need to be installed.

[RobotStudio download link](#)

### Course Goal

The participant after completion should be able to create, test and optimize a simple path following applications.

### Student profile

This course is the first step to become a robot programmer and for personnel with a need to modify existing programs

### Subject areas:

Health & Safety

Introduction to OmniCore and ABB robots

Jogging the robot with the joystick

Basic Move-instructions

Program structure (Datatypes, Instructions, Routines, Modules)

Revolution counters

Tool center point definition

Work-objects coordinate definition

Saving data (Program, Backup, Diagnostics)

Create a Virtual Controller

RobotStudio RAPID editor

I/O- instructions

Most common instructions and program logic

Most common functions

Configuring FlexPendant Dashboards

### Course objectives

Upon completion of this course, the student will:

Have a basic knowledge about the mechanics of ABB robots

Be able to jog the robot both linear, reoriented and axis-by axis

Be able to structure a program using routines and modules

Understand the difference between Task and Program

Be able to program basic movements

Be able to update the revolution counters

Be able to create and define tooldata

Be able to create and define wobjdata

Be able to save programs and backup the system

Be able to create a virtual copy of a real controller

Be able to use RobotStudio for editing the robot program both online and offline