

# Handling Tool Operation and Programming

## **COURSE OVERVIEW**

This course is intended for an operator, technician, engineer or programmer who must setup, record and/or troubleshoot programs on a Handling Tool software package. The course covers the Robot Operations outline intermixed with the tasks required to set up the Handling Tool application, test, run, and refine the program and production setup.

Recommended safety procedures are integrated into all training exercises.

The course consists of lectures, chapter reviews, demonstrations and a series of lab exercises designed to reinforce what the student has learned.

In addition to lab exercises, a pre-test and a post-test are used to measure mastery of objectives.

# 1.1 Objectives

- Power up and jog the robot
- Execute Teach Pendant Operations
- Set Robot Payload
- Perform File and Image Backups
- Save Individual Files
- Recover from common program and robot faults
- Create TOOL, USER, and JOG Frames
- Execute production operations

- Create, modify and execute a material handling program
- Edit Programs
- Monitor, force, and simulate input and output signals
- Program Branching Instructions
- Program Position Register Instructions
- Create and execute Macros

# 1.2 Prerequisites

This course will provide the enough knowledge for basic robot's programming tasks, that is the reason it doesn't has any prerequisites; although it may be easier if the student has taken the Robot Operations class first.

## 1.3 Course Schedule

#### **Session 1**

#### Introduction

Safety regulations, robot system, controller, software, interface and mechanical components will be cover in this section, applying a pre-test to measure mastery of objectives.

#### Session 2

#### Preparing the Robot

This section will detail the way to prepare for jogging, manage files and setting up the robot for the first use.

#### Session 3

#### Creating work frames

This chapter will explain how to clear a common error and create a work frames using different methods.

#### **Session 4**

#### Create a program

Setting the 3 **Dimensional Cartesian** coordinate system and using the motions instructions, this section will introduce you into basic programming concepts.

#### **Session 5**

# Edit a program and use **Inputs and Outputs** (I/O)

This section will explain how to edit a program using the editing commands and understand how the controller communicates with the Robot through the different I/O signals.

# Session 6

#### **Program Branching**

There are three kinds of branching instructions to make a program versatile and usefully for many applications.

#### **Session 7**

**Program Branching** Macro Instruction

#### **Session 8**

### **Positions Register** Miscellaneous commands

Global position data and miscellaneous commands will help you to set many instructions for maintenance and good programming habits.







