OTC DAIHEN INC.
ADVANCED WELDING & ROBOTIC SYSTEMS
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FD-ST Offline Robotic Programming Course Syllabus

A.   **Course Title**: FD-ST Offline Robotic Programming
       Course Number: FD-ST Offline
       Class hours: Monday 9:00 AM to 12:00 PM, 1:00 PM to 4:30 PM
                     Tuesday 9:00 AM to 12:00 PM, 1:00 PM to 4:30 PM

B.   **Prerequisites**: Students should have a basic knowledge of programming robotics or attended the FD Basic Programming class at OTC

C.   **Course description**: The Goal of this class is to give the student a working understanding and knowledge of the features and benefits of FD-ST. After the class the student should be able to setup and use FD-ST to create robot systems and write task programs within those systems..

D.   **Textbooks**: Manual for Model FD Simulation tool (1L22322A-E-4)

E.   **Course objectives**
       The student shall be able to perform the following after completion of the course:

       Introduction
       Features of FD-ST
       Composition of FD-ST
       Supported Robot Models

       Software Setup
       Operating Environment
       Required System
       Standard Components and Software Option
       Optional Components (Separate Estimate)
       Restrictions
       Setup Procedures
       Installation of the Software
       Screen Configuration of OLP
       Basic Operation of OLP Screen

       Teaching Preparation
       Creating New Cells
       Downloading the Cell

Opening the Cell
Copying the Cell
Importing the Cell
Saving and Uploading the Cell
Deleting the Cell

Installation Posture of Mechanism
Change by Mouse
Change by Numerical Input

Selection of Arc Peripheral equipment
Adding and Removing the Peripheral Equipment

Creating New Project
Opening the Project
Project Copy
Saving the Project
Deleting the Project

Reading the Workpiece
Layout of Workpiece
Working Range Display Function
Displaying the Working Range
Measurement Function (not available with AX-ST)

Teaching The Program
Manual Operation
Operation Handle
Cartesian Manual Operation
Joint Manual Operation
Snap Function
Creating the Tag Group
Current Tag Group
Registering the Tag
Display/Hide of Tag
Copying the Tag
Deleting the Tag
Restoring the Tag
Correcting the Tag
Snapping to Tag
Attaching the Tag Group
Parallel Shift of Tag Group
Tool Bar for Teaching
Automatic Path Creation
Creating the Task Programs

Tag Designation

Simulation
Teaching Mode
Playback Mode
Interference Check
Near-miss Check

Function of Operation Switches and Keys
Virtual FD
Virtual TP
Virtual IO
Virtual WPS

File Compilation of Robot Programs
Procedures for File Compilation
File Transfer

Troubleshooting
List of Error Codes
Error Code of OLP
Error Code of Virtual FD

I. Other requirements and notes
   1. Smoking is not permitted in the building. A designated outdoor smoking area is available at the back of the building.
   2. Class participation and completion of all exercises is recommended
   3. All safety rules must be followed at all times
        a. Eye protection must be worn at all times in the lab area
        b. Leather closed-tip shoes are to be worn at all times
   4. Lunch break will be 1 hour each day. Normal lunch hours will be from 12:00 PM – 1:00 PM. Students are responsible for lunch.
   5. A student who misses more than ½ day of instruction may be removed from the class at the discretion of Daihen, Inc. management and asked to return to their normal workplace.
   6. Please arrive no earlier than 15 minutes before class
   7. Proper attire is required at all times. Please do not wear clothing bearing slogans or sayings that could be offensive to others.