



DAIHEN INC.
ADVANCED WELDING & ROBOTIC SYSTEMS
1400 Blauser Dr.
Tipp City, OH 45371
Ph: (937) 667-0800 Fax: (937) 667-0885

Integrator Course

- A. 1. Course Title: Integrator Course
2. Course Number: Integrator
3. Class hours: Monday 10:00 AM to 12:00 PM, 1:00 PM to 4:30 PM
Tuesday – Thursday 9:00 AM to 12:00 PM, 1:00 PM to 4:30 PM
- B. 1. Prerequisites: Advanced Programming
- C. The *Integration and Installation Course* is designed exclusively for Daihen Inc.'s distributors and Integrators. This course is designed to teach the fundamentals of robot integration, set-up and installation into existing and custom robotic cells.
- D. 1. Textbook: Integrator Guide
- E. 1. Other required materials: none
- F. 1. Course objectives
The student shall be able to perform the following after completion of the course:
- a. Basic programming overview
 - b. Signal specifications/work procedure differences between FD11 and AX21
 - c. Complete System and Peripheral connection review
 - d. Proper Safety Peripheral connections
 - e. Additional axis configuration and Cooperation kit installation
 - f. System installation and memory format
 - g. System startup and customization
 - h. Connections and setup of Welbee Inverter
 - i. Overall system calibration and cross mastering external axis
 - j. Assignment of dedicated I/O
 - k. How to enable, program, and manipulate internal robot PLC
 - l. Review of relay PCB and digital I/O options
 - m. Proper system disassembly, shipping methods (packaging) and system recovery after delivery at end user

- n. Operation and installation of robot options(customizable list):
 - a. Endless rotation
 - b. Touch sense
 - c. Coordinated motion
 - d. Auto-calibration
 - e. External axis shift
 - f. AutoCal

G. Course outline

1. Monday: Introduction and basic programming overview, FD series review, Review of system, peripheral, and safety connections, and basic system evaluation
2. Tuesday: External axis component review, System installation, Memory format, System startup and customization, review welding peripherals, and system calibration.
3. Wednesday: Dedicated I/O assignments, Internal PLC communication and Programming, safety zone definitions, and review I/O options.
4. Thursday: Optional software review, Q&A open forum

H. 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.