Customer Training Schedule

Gain In-Depth Hands-On Experience under the guidance of World Class Instructors

Effective: Jan - Jun 2006
1-800-47-ROBOT
www.fanucrobotics.com
Support Solutions
Our cRc organization provides your company with a single point of access for all technical expertise and engineering resources. This highly integrated and skilled team is designed to ensure that you increase the overall effectiveness of your investment and gain maximum uptime by providing complete customer support services.

Call Center
Our World-Class Call Center provides dependable and timely resolution to your technical questions as we offer 24X7X365, multilingual support.

Online cRc Site
We understand the importance of being able to access our solutions from anywhere at anytime. Our dedicated secured Web site makes it extremely easy to do business with us. Part of our online Web support is a dedicated team who continually enhance our site, taking into account the feedback we receive from our customers.

Contact cRc
Call us via our new call center at 1-800-47-ROBOT
Visit us on the web at http://www.fanucrobotics.com/crc

The Ease of Doing Business with FANUC Robotics

A special message from the training manager...

Training stands behind the statement “Elevating Industry Standards in Customer Support”. We are committed to improving training, from developing web-based courses to improving training manuals to using robot software simulation during class for a better learning experience.

Our training provides a range of courses in three core areas: Programming, Electrical and Mechanical Maintenance with troubleshooting included.

In addition to training at the FRA Home Office, we provide dedicated training at the customer’s site and at our regional facilities:
- FANUC South East - Charlotte, N. Carolina
- FANUC Central - Mason, Ohio
- FANUC Midwest - Chicago, Illinois
- FANUC West - Lake Forest, California
- FANUC Canada - Mississauga, Ontario

Once you have found the courses you need, visit www.fanucrobotics.com or call 1-800-47-ROBOT today to contact us.

Regards
Brian Garry
Training Manager
General Information and Guidelines for Training, Scheduling and Certifications

Certifications:

FANUC Robotics’ certification achievements represent major milestones in our journey towards total quality management and meeting our customers’ needs. These ratings indicate that FANUC Robotics has developed the proper infrastructure for the design, manufacture and integration of robotics process solutions at our Rochester Hills, Michigan headquarters.

Authorized IACET Provider:
The Training Department is a member and authorized CEU (Certified Continuing Education Units) provider of the International Association for Continuing Education and Training (IACET). This is one more reason why FANUC Robotics training is your best training solution.

Continuing Education Units:
For CEUs, no partial credit will be issued if a student fails to complete the course, pre-tests, post-tests (where applicable), participate in group exercises (where applicable) and complete the Post Course Survey.

Credits will be issued on the basis of one CEU per 10 contact hours (10 hours of training). See individual course descriptions for award references.

Location:
FANUC Robotics America, Inc. Training Department is located in our Rochester Hills, Michigan headquarters. Our company also has facilities in Chicago, Illinois; Los Angeles, California; Charlotte, North Carolina; Cincinnati and Toledo, Ohio; Toronto, Ontario. Contact your local facility to explore possibilities of local training!

Method of Delivery for Our Courses:
All of the courses described in this brochure consist of lectures, demonstrations and a series of lab exercises designed to reinforce what the students have learned, including all required and recommended safety procedures.

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

Records and Transcripts:
All records are kept for at least two years. Training records may be obtained by sending a letter or e-mail to our address, which includes the following information: Student Name, Address, Company, Course Name and Course Dates. A $10 processing fee must accompany the request. Make checks payable to FANUC Robotics America.

Confidentiality:
Records are kept strictly confidential and will only be issued to those parties inquiring by the expressed written request of the student enrolled. No records will be released to a third party or to employers unless accompanied by the expressed written request of the student.

Critique sheets may be shared with employers and with auditors to ensure course quality and for resolution of any course issues.

Prerequisites:
FANUC Robotics recommends attendance in prerequisite classes prior to attending our specialized and advanced classes. Experienced students who may have worked for many years with our robots but who have not had formal training may feel they do not need to attend a basic class. FANUC Robotics will accept registrations from such students with the understanding that the FANUC instructor in an advanced class will follow the published class schedule and will not be able to coach individual students on basic concepts that may be required for the class.

Please review this brochure carefully or visit our website at www.fanucrobotics.com to review prerequisites for selected classes.
FANUC ROBOTICS PROVIDES THE TRAINING YOU NEED, WHEN YOU NEED IT!

General Information and Guidelines for Training, Scheduling and Certifications

Training Cancellations:
Cancellation of a registration is done at no charge if FANUC Robotics is notified in writing at least 10 business days before start of class. Cancellation is subject to a fee equal to 100% of the course tuition if notice is received with less than two weeks notice.

Training Rescheduling:
Rescheduling of a registration is done at no charge if FANUC Robotics is notified in writing at least two weeks before start of class. A 30% fee will be charged for notice of less than two weeks. A training voucher will be issued upon cancellation that must be used within a period of six months of issue. Unused vouchers will not be subject to a refund. The full fee will be charged for students who fail to attend the class without any advance notice.

Training Class Payment:
Payment may be made by check, credit card or purchase order and must be received prior to attendance in any training class.

Please remit all monies to:
FANUC Robotics America, Inc.
Drawer #5739
PO Box 79001
Detroit, MI 48279-5739

Development Charges:
Execution of on-site training programs may involve development charges. Please review this brochure carefully or go to our website at www.fanucrobotics.com to review whether these charges are applicable to your on-site selection.

Yes, Older Product Training Is Available!
Just contact our registrar for more information.

Need Robot Training in a Foreign Language?
Class dates indicate when it will be taught in a different language. Just contact our registrar for more information.

Training Documentation
All documentation is issued only during the course. Any work material issued and used in courses may not be reproduced either in whole or in part. All software used in courses is the property of FANUC Robotics and may not be copied or reproduced. If this stipulation is infringed, we reserve the right to exclude the person concerned from the course and to take further legal action. The documentation issued serves informative purposes; it is based on the current state of technical development and does not include documentation updates.

Liability
FANUC Robotics America is not liable for loss or theft of property brought into the training rooms, especially clothing and valuables.
Computer Based Training

Web Based Robot Operations Training:
FANUC Robotics’ Web Based Training (WBT) Program, “Robot Operations”, is an introductory robotics course that includes basic robot terminology and operational skills. The WBT is a self-paced learning tool that allows users to access information and move through material based on a person’s specific interest or need. The course content and structure is based on an assessment of concepts and skills taught at the FANUC Robotics America’s training facility in the course named, “Robot Operations.” FANUC Robotics Robot Operation WBT is, “Training you need, when you need it!”

Ordering Information:
To view a demo or for in-depth information on this training product, call 1-800-47-ROBOT or email: traininginfo@fanucrobotics.com.

Features:
- Easy-to-use interface for simple navigation
- Access to specific content through modules that target specific areas of interest or need
- Provides self-assessment through Progress Check and Mastery Challenge testing
- Automatically bookmarks progress through the course based on username logon and password identification, making identification of completed modules easily recognizable
- On-demand detailed reporting of student’s progress and completion.

Benefits:
- Self-paced learning when you need it
- Offers instant feedback, letting students know about areas that may need review
- Use as a primer to instructor-led courses held at FANUC Robotics America Rochester Hills facility
- Diminishes the time users spend away from their primary job function for training
- Reduces travel expenses to attend basic operations training
- Can also be used as a refresher course, due to constant personnel changes
- Provides customers the latest in Instructional Design
- CEU accreditation available

Objectives:
Upon completion of the course the student will be able to:
- Demonstrate or explain how to safely cycle power from the Standard Operator Panel observing recommended safety practices
- Describe how to move the robot in the JOINT and WORLD jog modes, anticipating the robot’s direction and speed, using the Teach Pendant
- Describe or demonstrate creating and making changes to Teach Pendant programs
- Describe or demonstrate how to access, test, abort or run a program in a production environment

Web Based Robot Operations:
FANUC Robotics’ Web Based Training (WBT) Program, “Robot Operations”, is an introductory robotics course that includes basic robot terminology and operational skills. The WBT is a self-paced learning tool that allows users to access information and move through material based on a person’s specific interest or need. The course content and structure is based on an assessment of concepts and skills taught at the FANUC Robotics America’s training facility in the course named, “Robot Operations.” FANUC Robotics Robot Operation WBT is, “Training you need, when you need it!”

Ordering Information:
To view a demo or for in-depth information on this training product, call 1-800-47-ROBOT or email: traininginfo@fanucrobotics.com.

Features:
- Easy-to-use interface for simple navigation
- Access to specific content through modules that target specific areas of interest or need
- Provides self-assessment through Progress Check and Mastery Challenge testing
- Automatically bookmarks progress through the course based on username logon and password identification, making identification of completed modules easily recognizable
- On-demand detailed reporting of student’s progress and completion.

Benefits:
- Self-paced learning when you need it
- Offers instant feedback, letting students know about areas that may need review
- Use as a primer to instructor-led courses held at FANUC Robotics America Rochester Hills facility
- Diminishes the time users spend away from their primary job function for training
- Reduces travel expenses to attend basic operations training
- Can also be used as a refresher course, due to constant personnel changes
- Provides customers the latest in Instructional Design
- CEU accreditation available

Objectives:
Upon completion of the course the student will be able to:
- Demonstrate or explain how to safely cycle power from the Standard Operator Panel observing recommended safety practices
- Describe how to move the robot in the JOINT and WORLD jog modes, anticipating the robot’s direction and speed, using the Teach Pendant
- Describe or demonstrate creating and making changes to Teach Pendant programs
- Describe or demonstrate how to access, test, abort or run a program in a production environment

Web Based Robot Operations:
FANUC Robotics’ Web Based Training (WBT) Program, “Robot Operations”, is an introductory robotics course that includes basic robot terminology and operational skills. The WBT is a self-paced learning tool that allows users to access information and move through material based on a person’s specific interest or need. The course content and structure is based on an assessment of concepts and skills taught at the FANUC Robotics America’s training facility in the course named, “Robot Operations.” FANUC Robotics Robot Operation WBT is, “Training you need, when you need it!”

Ordering Information:
To view a demo or for in-depth information on this training product, call 1-800-47-ROBOT or email: traininginfo@fanucrobotics.com.

Features:
- Easy-to-use interface for simple navigation
- Access to specific content through modules that target specific areas of interest or need
- Provides self-assessment through Progress Check and Mastery Challenge testing
- Automatically bookmarks progress through the course based on username logon and password identification, making identification of completed modules easily recognizable
- On-demand detailed reporting of student’s progress and completion.

Benefits:
- Self-paced learning when you need it
- Offers instant feedback, letting students know about areas that may need review
- Use as a primer to instructor-led courses held at FANUC Robotics America Rochester Hills facility
- Diminishes the time users spend away from their primary job function for training
- Reduces travel expenses to attend basic operations training
- Can also be used as a refresher course, due to constant personnel changes
- Provides customers the latest in Instructional Design
- CEU accreditation available

Objectives:
Upon completion of the course the student will be able to:
- Demonstrate or explain how to safely cycle power from the Standard Operator Panel observing recommended safety practices
- Describe how to move the robot in the JOINT and WORLD jog modes, anticipating the robot’s direction and speed, using the Teach Pendant
- Describe or demonstrate creating and making changes to Teach Pendant programs
- Describe or demonstrate how to access, test, abort or run a program in a production environment
Operations and Programming Classes

**Robot Operations**
24 Hours, Class Code: J2P0305

**Course Description:**
This course is intended for the person who operates or may be required to perform maintenance on a System R-J to R-J3iB Controller with standard application software package. It covers the tasks and procedures needed to reach the course goals with both classroom instruction and hands-on training. The course does not address the set-up and operation of specific software features and options.

**Course Objectives:**
- Power up and Jog the Robot
- Recover from common program and robot faults
- Execute production operations
- Create, modify and execute a teach pendant program
- Backup and restore individual programs and files

**Prerequisites:** None

Michigan
Jan 23
Feb 20
Mar 20
Apr 18
May 1
May 15

Canada
Mar 21
Feb 28
Jan 31
Apr 25
Apr 3

**KAREL Operation & Introduction to Programming**
40 Hours, Class Code: J2P0315

**Course Description:**
This course covers operation of the Systems R-J to R-J3iB Controller and fundamentals of the KAREL language. Instruction includes material contained in the “Robot Operations” course in addition to fundamental programming techniques using the KAREL language. The course is not an in-depth programming course and is focused on the interpretation of existing code rather than development of application programs.

**Course Objectives:**
- Perform startup and shutdown procedures
- Jog the robot
- Teach positional data
- Perform error recovery procedures
- Write, enter, debug and test simple KAREL and teach pendant programs

**Prerequisites:** None

Michigan
Jan 9
Feb 20
May 8 - R-H Controller
May 15
Jun 26

Canada
Mar 21

California
Feb 28

Ohio
Jan 31

Illinois
Apr 25

North Carolina
Apr 3
Operations and Programming Classes (Cont.)

KAREL Operation & Accelerated Language Programming
80 Hours, Class Code: J2P0320

Course Description:
This is an accelerated course for engineers and technicians with prior programming experience on a high level such as ‘C’, ‘PASCAL’, or ‘FORTRAN’. The students will create, write, and modify application programs using KAREL language. This course covers the KAREL Operations and Introduction to Programming class outline as well as concepts that explain fundamental programming techniques using the KAREL language, language syntax, system variables and the I/O structure. Advanced topics of multi-tasking, file handling and serial communications are covered.

Course Objectives:
- Perform startup and shutdown procedures
- Jog the Robot
- Teach positional data
- Perform error recovery procedures
- Write, enter, debug and test KAREL and HandlingTool (TPP+) programs.

Prerequisites: Prior programming experience on a high level language such as “C”, PASCAL, or FORTRAN.

Michigan
Mar 27

Course Note:
The following programming courses are intended for an operator, technician, engineer or programmer who must setup and record a program on a System R-J to R-J3iB controlled robot with a specific application software such as ArcTool, DispenseTool, HandlingTool, PaintTool, PalletTool or SpotTool. The courses cover the Robot Operations outline intermixed with the tasks required to set up the specific application, test, run and refine the program and production setup.

ArcTool Operation and Programming
32 Hours, Class Code: J2P0410

Course Objectives:
- Safely power up the robot from a complete shutdown
- Manipulate the robot using the teach pendant
- Setup and test robot movement parameters for a given work cell and torch
- Setup ArcTool for specific weld applications
- Create and test weld programs for a given weld task
- Edit weld programs in teach mode
- Setup and save to file management devices
- Manipulate I/O in program logic and real logic

Prerequisites: None

Michigan
Jan 9
Feb 6
Mar 6
Apr 10
May 8
Jun 19

DispenseTool Operation & Programming
32 Hours, Class Code: J2P0210

Course Objectives:
- Power up and Jog the Robot
- Recover from common program and robot faults
- Execute production operations
- Create, modify and execute a dispensing program
- Backup and restore individual programs and files

Prerequisites: None

Michigan
Jan 23
Apr 3
May 30
Operations and Programming Classes (Cont.)

**Handling Tool Operation & Programming**
32 Hours, Class Code: J2P0310

**Course Objectives:**
- Power up and Jog the Robot
- Recover from common program and robot faults
- Execute production operations
- Create, modify and execute a material handling program
- Create and execute MACROs
- Monitor, force and simulate input and output signals
- Backup and restore individual programs and files

**Prerequisites:** None

- **Michigan**
  - Jan 3
  - Jan 17
  - Jan 30
  - Feb 13
  - Feb 27
  - Mar 6
  - Mar 20
  - Apr 10
  - Apr 24
  - May 8
  - May 22
  - Jun 5
  - Jun 19
- **Canada**
  - Feb 21
- **California**
  - Jan 24
  - May 30
- **Ohio**
  - Mar 7
  - Jun 6
- **Illinois**
  - Jan 10
  - May 16
- **North Carolina**
  - Feb 6
  - Jun 12

**Paint Tool Operation & Programming**
32 Hours, Class Code: J2P0510

**Course Objectives:**
- Power up and Jog the Robot
- Recover from common program and robot faults
- Execute production operations
- Setup paint parameters (FF, AA, FA, ES)
- Create, modify and execute a teach pendant process

**Prerequisites:** None

- **Michigan**
  - Jan 17
  - Mar 6
  - Mar 27
  - May 1
  - Jun 26

**P-500 Operation & Programming**
24 Hours, Class Code: J3P0500

**Course Objectives:**
- Safely power up the robot from a complete shutdown
- Recover from common program and robot faults
- Execute production operations
- Setup paint parameters (FF, TS, SA, ES)
- Create, modify and execute a teach pendant process using PaintPRO offline simulation program
- Run Reports
- Power Down

**Prerequisites:** None

- **Michigan**
  - Feb 6
  - Apr 10
Operations and Programming Classes (Cont.)

**PalletTool Operation**
32 Hours, Class Code: J3P0710

**Course Objectives:**
- Power up and Jog the Robot
- Recover from common program and robot faults
- Teach the Infeed and Pallet Stations and Station I/O
- Create the Unit Loads and Optimal Path using PalletPRO software and Download to the robot
- Create different Unit Load settings: Labels Out, Breaking Layers, Flip Layers and Mixed Layers
- Execute production operations
- Backup and restore individual programs and files
- Development charges will be added to any on-site training request.

**Prerequisites:** None

**Michigan**
Jan 3
Mar 13
Apr 18

---

**SpotTool Operation & Programming**
32 Hours, Class Code: J2P0610

**Course Objectives:**
- Power up and Jog the Robot
- Recover from common program and robot faults
- Execute production operations
- Create, modify and execute a teach pendant program
- Backup and restore individual programs and files
- Setup SpotTool and all related I/O

**Prerequisites:** None

**Michigan**
Jan 9
Feb 13
Mar 13
Apr 24
Jun 12

---

**SpotTool Operation & Programming with Servo Gun**
40 Hours, Class Code: J20610SG

**Course Objectives:**
- Power up and Jog the Robot
- Recover from common program and robot faults
- Execute production operations
- Create, modify and execute a teach pendant program
- Backup and restore individual programs and files
- Setup SpotTool and all related I/O
- Setup and test auxiliary axis settings needed for Servo Gun operation
- Setup SpotTool for Servo Gun welding
- Create and test weld programs using the Servo Gun
- Setup Servo Gun pressure schedules including the Weld Stroke
- Manipulate the Servo Gun using Teach Pendant keys

**Prerequisites:** None

**Michigan**
Jan 9
Feb 13
Mar 13
Apr 24
Jun 12

---

**FANUC CNC Controls**

---

To Register Call 1-800-47-ROBOT Or Contact Us At www.fanucrobotics.com
Specialized Training Classes

Course Notes:
These courses cover additional functionality and are designed for experienced students who have taken our standard applications courses. They do not cover basic Robot Operations or programming. Features and Options Courses do not cover advanced programming topics, but focus on the set up and execution of both standard and optional features which lie outside the scope of normal day-to-day operation.

ArcTool Features and Options
40 Hours, Class Code: ADV0410

Course Objectives:
- Write multi-tasking programs
- Setup payload schedules, Collision Guard sensitivities and use them in a program
- Setup and use the Torchmate option
- Setup and use Touch Sensing
- Use Rapid Fault Recovery
- Setup and use TAST

Prerequisites: Completion of ArcTool Operations and Programming.
Michigan
Jun 5

SpotTool Features and Options
40 Hours, Class Code: ADV0610

Course Objectives:
- Shift Function
- Tool Frame Adjust option
- Coordinates Offset function
- Remote Tool Center Point option
- Error Recovery option
- Collision Guard option
- DeviceNet I/O option
- Backup and restore individual programs and files
- SpotTool+ Advanced Functions option
- Program Toolbox option

Prerequisites: Completion of SpotTool Operations and Programming.
Michigan
May 8

Servo Gun Operation & Programming
16 Hours, Class Code: SERVOGUN

Course Description:
This course is designed for those who are familiar with SpotTool+ using Air Gun but have not previously worked with Servo Gun. It does not cover any basic operation, set up, or programming of the robot.

Course Objectives:
- Setup and test auxiliary axis settings needed for Servo Gun operation
- Setup SpotTool+ for Servo Gun welding
- Create and test weld programs using the Servo Gun
- Set up Servo Gun pressure schedules including the Weld Stroke menu
- Manipulate the Servo Gun using Teach Pendant keys

Prerequisites: Completion of SpotTool Operations and Programming.
Michigan
May 30

HandlingTool Features and Options
40 Hours, Class Code: ADV0310

Course Objectives:
- Create multi-tasking TP programs
- Write condition handler TP programs for unexpected interrupts – global and local
- Setup Payload Schedules and code their use
- Setup Collision Guard sensitivities and code their use
- Perform Background Editing of a TP program
- Address Coordinate Offsets within a TP program
- Setup and use the TP Menus and Prompts Feature
- Setup the PassWord Feature
- Backup and restore individual programs and files

Prerequisites: Completion of HandlingTool Operations and Programming.
Michigan
Feb 20
Mar 27
May 15
Specialized Training Classes (Cont.)

**PalletTool Setup & Programming**  
40 Hours, Class Code: ADV0710T  

**Course Description:**  
This course is designed for those who are familiar with HandlingTool programming. The course will set up a Pallet system, create unit loads using PalletPRO 3D robot palletizing simulation software, and adjust existing programs to avoid obstacle collision. This course does not cover robot operations or HandlingTool programming.

**Course Objectives:**  
- Set up the Pallet System  
- Create a new workcell using PalletPRO  
- Add palletizing instruction to TP programs  
- Specify and fine tune the best path for your robot to take when palletizing  
- Modify Utool values for various grippers  
- Use pallet offset information  
- Enable alternate return paths  
- Stack with labels out and flipped layers  
- Set up Ethernet communications  
- Modify key program to avoid obstacle collision

**Prerequisites:** Completion of HandlingTool Operations and Programming.  

**Michigan**  
Mar 20  
May 22  
Jun 26

**PaintPRO Robotic Workcell Simulation (ROBOGUIDE)**  
8 Hours, Class Code: PRO0510  

**Course Description:**  
This class demonstrates how to use PaintPRO simulation software to program FANUC’s new P-500 paint robots. Upon completion of this class, students will know how to setup a multi-arm workcell and add a new style utilizing the Cad Generator program.

**Course Objectives:**  
- Create a Virtual WorkCell  
- Jogging Robots using the Virtual Teach Pendant & Teach Tool  
- Creating a Program  
- Editing a Program  
- Calibrating the Virtual & Real World WorkCells (overview only)  
- Create a Style using the Cad Generator program

**Prerequisites:** Previous experience or training in a related field involving material handling using automation would be helpful to the student.  

**Michigan**  
Feb 3  
Jun 23

**HandlingPRO Robotic Workcell Simulation (ROBOGUIDE)**  
8 Hours, Class Code: PRO0310  

**Course Description:**  
This course will provide procedures for creating a HandlingPRO virtual workcell. When completed, the workcell created will contain a FANUC robot with end-of-arm tooling, one or more fixtures for holding a part and a robot TPP Program which moves the part from one fixture to the other. More specifically, the student will:

**Course Objectives:**  
- Create a new workcell  
- Edit the robot properties  
- Add a part to the workcell  
- Add End-of-Arm Tooling to the robot  
- Add a pick fixture to the workcell  
- Add a place fixture to the workcell  
- Create/run a robot program  
- Adding a second robot  
- Create an AVI of the workcell

**Prerequisites:** Previous experience or training in a related field involving the application of paint materials using automation would be helpful to the student.  

**Michigan**  
Mar 10  
Jun 30

To Register Call 1-800-47-ROBOT Or Contact Us At www.fanucrobotics.com
Specialized Training Classes (Cont.)

All V-500iA (visLOC/visTRAC) classes

Prerequisites: Completion of Handling Tool Programming, Handling Tool Features and Options or KAREL Operations & Programming

V-500iA/2DV (visLOC & visLOCi 3D) Operation & Programming (3D)
16 Hours, Class Code: 3DV500iA

Course Description:
This course covers the basic tasks and procedures required for an operator, technician, engineer or programmer to setup, teach, test and modify vision applications using V-500iA/2DV software and R-J3iB controller.

Course Objectives:
- Power up and jog the robot
- Set Robot TCP/IP Parameters
- Setup Ethernet parameters in vision PC
- Create, set up and execute a Multi-View Process
- Load, Save and Backup Processes
- Troubleshooting

Michigan
Jan 17
May 30

V-500iA/3DL Operation & Programming
24 Hours, Class Code: 3DV500iA

Course Description:
This course describes the setup and operations of the 3D Laser Vision Sensor as well as the V-500iA/3DL software that is used to guide robots controlled by an R-J3iB control unit.

Course Objectives:
- Setup
- 3D Laser Vision sensor basic operations
- Robot Communication Setting
- Calibration
- Teaching and testing the location tool
- Teaching and execution the 2D vision process
- Teaching and testing the 3D vision process
- Creation and execution of a robot program

Michigan
Feb 27
May 8

V-500iA/2DV (visLOC) Operation & Programming (2D)
24 Hours, Class Code: VISLOC1

Course Description:
This course covers the basic tasks and procedures required for an operator, technician, engineer or programmer to setup, teach, test and modify vision applications using V-500iA/2DV software and R-J3iB controller.

Course Objectives:
- Power up and jog the robot
- Setup robot to computer communication
- Setup and calibrate the camera
- Setup single view (fixed mounted) process
- Setup single view (robot mounted) process
- Setup multi-view process (robot mtd. camera)
- TPP programming
- Troubleshooting

Michigan
Jan 3
Feb 13
Apr 3
Jun 5
Jun 26

V-500iA/Line Track (visTRACi) Operation & Programming
32 Hours, Class Code: visTRAC

Course Description:
When enrolling in this course, students will attend the 24 hour visLOC Operation & Programming course then continue learning the following course topics:

Course Objectives:
- Hardware/Software overview
- Set up Line Tracking
- Develop a visTRAC application
- TPP programming
- Troubleshooting

Michigan
Feb 13
Apr 3
Jun 5
Jun 26
Specialized Training Classes (Cont.)

**Advanced TPP Programming**
40 Hours, Class Code: ADVTPP

**Course Description**
Advanced programming is the next step after an Operation and Programming class. Topics from the previous classes will be used in this class to develop a more complex scenario. Students will be given the task of creating all the necessary programs to integrate robots into a cell.

**Course Objectives:**
- Define cell requirements
- Develop programs with a language independent model
- Coding of programs using advanced programming techniques
- Cell Interface
- Error Trapping / Recovery

**Prerequisites:** Completion of an “Operation & Programming” class.

**Michigan**
Jan 23
May 1
Jun 12

**Applicator Test Stand**
4 Hours, Class Code: ADVATS

The Fanuc VersaBell Test Stand is an electric-pneumatic device used to test the FANUC Paint Applicator. When properly utilized, this system can decrease production down time by insuring the paint applicator is functioning properly.

**Course Objectives:**
- Overview
- Test Stand installation
- Operations and Testing
- Troubleshooting

**Prerequisites:** None
Electrical Maintenance Classes

Course Notes:

Electrical courses are designed for maintenance personnel responsible for installing and maintaining the System RS1 configured, R-J2, R-J3 or R-J3iB controller. Although Robot Operations is not a prerequisite for these courses, the operational aspects covered in these courses are minimal. A review of the functions that the student will be required to perform when back in the workplace is advised.

Note: If a student is required to set up and program the robot, the Robot Operations or application programming class is also recommended.

Course Objectives (the following Objectives apply to ALL Electrical Maintenance Courses):

- Safely power up the robot from complete shutdown
- Manipulate the robot using the teach pendant
- Recognize and describe major robot components
- Troubleshoot Class 1, 2 and 3 faults
- Master the robot
- Manipulate I/O for the robot

Electrical Maintenance w/R-H Controller
40 Hours, Class Code: HME0450
Please call for course date availability

Electrical Maintenance w/R-J3iB LR Mate Controller
32 Hours, Class Code: J3iBME0250
Michigan
Mar 27
Jun 12

Electrical Maintenance w/R-J2 Controller
32 Hours, Class Code: J2E0250
Michigan
Jan 17
May 22

Electrical Maintenance w/R-J3 Controller
32 Hours, Class Code: J3E0250
Michigan
Jan 3
Feb 27
Jun 19

Electrical Maintenance w/RS1-4 Configured or RIA R-J3 Control Reliable Controller
32 Hours, Class Code: J3ERS1
Michigan
Mar 6
Electrical Maintenance Classes (Cont.)

Electrical Maintenance w/R-J3iB Controller
32 Hours, Class Code: J3iBE0250
Michigan
Jan 9
Jan 30
Feb 20
Mar 13
Apr 3
Apr 24
May 15
Jun 5
Jun 26
Canada
Mar 7
Jun 27
California
Apr 18
Ohio
May 2
Jun 20
Illinois
Feb 14
Jun 20
North Carolina
Mar 27
May 22

Paint Electrical Maintenance w/R-J3iB Controller
32 Hours, Class Code: J3iBE0550
Michigan
Jan 23
Feb 13
Mar 20
Apr 18
May 8
May 30

Paint Electrical Maintenance w/P-500 R-J3iB Controller
32 Hours, Class Code: J3EP550
Michigan
Feb 27

Paint Electrical Maintenance w/R-J3 Controller
32 Hours, Class Code: J3EP550
Michigan
Apr 24

Paint Electrical Maintenance w/RIA R-J3 Control Reliable Controller
32 Hours, Class Code: J3EP550CR
Please call for course date availability

DeviceNet Setup & Functionality
4 hours, Class Code: J3P0570
The course covers the setup and functionality of DeviceNet Interface

Course Objectives:
• Describe function and purpose of DeviceNet
• Describe DeviceNet installation
• Troubleshoot typical DeviceNet problems

Prerequisites: Complete attendance in the Robot Operations Course
Please call for course date availability

Ethernet IP Setup & Functionality
4 hours, Class Code: J3P0580
The course covers the setup and functionality of an Ethernet Interface

Course Objectives:
• Describe function and purpose
• Describe Ethernet installation
• Troubleshoot typical Ethernet problems

Prerequisites: Complete attendance in the Robot Operations Course

Michigan
Feb 3
Mar 17
Jun 9

To Register Call 1-800-47-ROBOT Or Contact Us At www.fanucrobotics.com
Mechanical Maintenance Classes

Course Notes:

Please call the FANUC Robotics Training Registrar if your model is not listed. These courses are recommended for mechanical technicians or other persons responsible for mechanical troubleshooting, maintenance and repair of the robot. We require some previous mechanical knowledge of repair and assembly of robots or machine tools. These courses provide detailed instruction and procedures necessary for complete disassembly, inspection and reassembly of the FANUC mechanical unit.

Course Objectives (the following Objectives apply to ALL Mechanical Maintenance Courses):

- Diagnose robot mechanical problems to the component level
- Replace all mechanical components on the robot
- Perform adjustments to the robot
- Perform periodic maintenance on the mechanical unit

**M-6i or AM100i Robot Disassembly/Reassembly**
20 Hours, Class Code: MTDM6i
Michigan
Jun 12

**M-16i or AM120i Robot Disassembly/Reassembly**
20 Hours, Class Code: MTDM16i
Michigan
Jun 14

**M-6iB or AM100iB Robot Disassembly/Reassembly**
24 Hours, Class Code: MTDM6iB
Michigan
Jan 17
Jan 30
Apr 18
May 22

**M-16iB or AM120iB Robot Disassembly/Reassembly**
24 Hours, Class Code: MTDM16iB
Michigan
Jan 17
Jan 30
Apr 18
May 22

**M-410i Robot Disassembly/Reassembly**
32 Hours, Class Code: MTD410i
Michigan
Jan 23

**M-410iB Robot Disassembly/Reassembly**
32 Hours, Class Code: MTD410iB
Michigan
Apr 3
Jun 12

**M-710i/M710iB Robot Disassembly/Reassembly**
28 Hours, Class Code: MTDM710i
Michigan
Jan 30
Mar 20
May 1

**P-50 Robot Disassembly/Reassembly**
32 Hours, Class Code: MTDP50
Michigan
Feb 20
May 15

**P-120 Robot Disassembly/Reassembly**
32 Hours, Class Code: MTD120
Please call for course date availability

**P-145 Robot Disassembly/Reassembly**
32 Hours, Class Code: MTD145
Please call for course date availability
Mechanical Maintenance Classes (Cont.)

P-155 Robot Disassembly/Reassembly
32 Hours, Class Code: MTDP155
Michigan
Feb 27
Jun 5

P-200 Robot Disassembly/Reassembly
32 Hours, Class Code: MTDP200
Please call for course date availability

P-200E Robot Disassembly/Reassembly
32 Hours, Class Code: MTDP200E
Michigan
Jan 9
Feb 27
May 22
Jun 19

P-500 Robot Disassembly/Reassembly
32 Hours, Class Code: MTDP50
Michigan
Apr 24

R-2000\textsuperscript{i} Robot Disassembly/Reassembly
32 Hours, Class Code: MTDR2000\textsuperscript{i}
Michigan
Feb 20
Mar 13
Apr 10
May 8
Jun 5

S-420\textsuperscript{i} Robot Disassembly/Reassembly
32 Hours, Class Code: MTDS42i
Please call for course date availability

S-430\textsuperscript{i} Robot Disassembly/Reassembly
32 Hours, Class Code: MTDS43i
Michigan
Feb 13

S-500 Robot Disassembly/Reassembly
32 Hours, Class Code: MTDS500
Please call for course date availability

S-500\textsuperscript{i}B Robot Disassembly/Reassembly
32 Hours, Class Code: MTDS500\textsuperscript{i}B
Michigan
Jan 3

VersaBell Maintenance I/II
8 Hours. Class Code: VERSABL or VERSABL2

Course Description:
This course covers the detailed instruction and procedures necessary for maintaining the FANUC VersaBell Rotary Atomizer. The course includes hands-on disassembly, assembly, repair, troubleshooting, and preventative maintenance.

Course Objectives:
- Identification of the VersaBell components
- Disassembly of the VersaBell
- Identification of defective applicator components
- Replacement procedures of applicator components
- Assembly of the VersaBell applicator

Michigan - VersaBell I
Feb 17
Michigan VersaBell II
Apr 28
Reservation Information

Things you should know before calling to make a class reservation:

1) Know the **Controller model** you require for training. This can be found on the upper right side of the Controller.

   ![Controller Model](image)

2) Know the **Robot Model**. This can be found on all robot arms.

   ![Robot Model](image)

3) Know the **Application Software** (ArcTool, HandlingTool, KAREL, etc.). The Teach Pendant will display this when you power-up the Controller.

   ![Application Software](image)

4) Know how **many students** will be attending and on which dates.

5) **Where** would you like to attend the training? At FANUC Robotics’ site or your location?

6) If you would like training **on-site**, do you have **dedicated robot(s)** for training?

Where to make the Reservation:

1) **PHONE**: You can call **1-800-47-ROBOT** (1-800-477-6268) at anytime between the hours of 7:00 am - 8:00 pm EST.

2) **WEB**: [www.fanucrobotics.com](http://www.fanucrobotics.com) - Select “Customer Resource Center (Aftermarket Services)” then “Course Registration Form”
Rochester Hills, MI Facility Map

From Oakland Pontiac Airport:
M59 East to North Squirrel. Take Hamlin Road East. Go past Adams traffic light, take first Boulevard turn around. FANUC Robotics on north side of Hamlin.

From Detroit Metro Airport:
I-94 East to I-75 North to Adams Road Exit. Turn Left, north on Adams Road, go approximately 3 miles. Turn right on Hamlin, take first Boulevard turn around. FANUC Robotics on north side of Hamlin.

From Blue Water Bridge (Port Huron):
I94 West to M-59 West to Adams Exit. Left on Hamlin Road to FANUC Robotics. Turn right into parking lot.
FANUC ROBOTICS PROVIDES THE TRAINING YOU NEED, WHEN YOU NEED IT!

FANUC Robotics America, Inc.
3900 West Hamlin Road
Rochester Hills, MI 48309-3253
1-800-47-ROBOT