

# FD11 Electrical Maintenance

Course Length: 5 days

<b><i>Course Synopsis:</i></b>	This course will familiarize the students with the skills to effectively maintain, diagnose, troubleshoot, and repair the base Nachi FD11 Controller cabinet and Nachi robot arm. To insure sufficient hands-on experience and encourage instructor / trainee discussion, Nachi recommends a maximum class size of six (6) trainees which allows for a minimum of one (1) training robot being made available for each group of three (3) trainees. Performance objectives will be met utilizing a combination of 45% classroom lectures and 55% hands-on lab projects, dependant upon the skill level of the students as a group.
<b><i>Who Should Attend:</i></b>	This course is intended for production skilled tradesmen, engineering personnel and workers whose responsibilities include electrical maintenance and repair of the FD11 Controller and electrical robot arm operation.
<b><i>Prerequisites:</i></b>	Trainees scheduled for this course should have completed a Nachi FD11 or AX Operation Programming course or have equivalent work experience with the FD11 or AX controller. Use of a digital volt meter and prior machine control troubleshooting is required.
<b><i>What You Will Learn:</i></b>	<ul style="list-style-type: none"> <li>• Robot Safety</li> <li>• General Electrical Safety</li> <li>• Basic Operation</li> <li>• Help Messages</li> <li>• Major Robot System components</li> <li>• Control System Overview</li> <li>• Power Distribution</li> <li>• Servo Drive System Analysis</li> <li>• PC Board Description and Function</li> <li>• Schematic Diagram Analysis</li> <li>• Error Code Troubleshooting</li> <li>• Control Cabinet Maintenance</li> <li>• Error Code Logging</li> <li>• Control Cabinet Monitoring</li> <li>• Cabinet Component Replacement Procedure</li> <li>• Power Supply Replacement and Adjustments</li> <li>• Hands-On Troubleshooting</li> <li>• Robot Arm Wiring</li> <li>• Motor Replacement Procedure</li> <li>• Robot Encoder System</li> <li>• Encoder Reset Procedure</li> <li>• Encoder Offset Procedure</li> <li>• Robot Maintenance</li> </ul>
<b><i>Time:</i></b>	Class time is 7:30 a.m. – 3:30 p.m. Breaks are scheduled throughout the day and lunch will be provided at roughly 11:30 a.m.
<b><i>Course Materials:</i></b>	Course materials are provided by the instructor. We may change or alter course topics to best suit the classroom situation.
<b><i>Locations:</i></b>	The Nachi Training Center is located in Novi, Michigan. Courses can also be conducted at our customer's facility upon request, please contact for special pricing information.
<b><i>Related Courses:</i></b>	FD11 Operation Programming
<b><i>Registration:</i></b>	Courses are scheduled in accordance to customer requests and requirements. Please visit our website <a href="http://www.nachirobotics.com">www.nachirobotics.com</a> or call (248) 305-6545 for pricing and availability.

**\*Students must wear proper attire – long pants, leather shoes, and safety glasses recommended.**