

2022 COURSE DESCRIPTIONS & SCHEDULE



PLC Maintenance Class

The purpose of the Omron PLC Maintenance Course is to introduce an individual to the basic concepts of Omron PLC Maintenance and Troubleshooting using a mixture of lectures and hands on labs. This course is designed for the individual with little Omron PLC programming experience. The topics that are covered in the Maintenance training course are as follows: A brief history of the Omron PLC family; wiring to the PLC; the Omron I/O addressing scheme; basic functions of an Omron PLC (SCAN); CX-Programmer programming software; on-line editing of programs; and data memories and basic trouble shooting techniques. You must have a good understanding of the Windows operating system. A Laptop computer with CX-Programmer v9.75 or newer installed and a USB cable is required, including a USB to RS-232 converter cable. You must have administrator privileges to install software, drivers, and change the IP address on your PC.

Basic PLC Training

The purpose of the Basic PLC Training Course is to introduce an individual to the basic concepts of the Omron PLC using a mixture of lectures and hands on labs. This course is designed for those with little or no prior PLC experience. The topics covered are: the history of the Omron PLCs; wiring to the PLC; I/O addressing; basic functions of an Omron PLC (SCAN); the design, entering and debugging of a basic ladder logic program; CX-Programmer software; on-line editing; and basic trouble shooting techniques. The hardware used in the class will be the Omron CJ2M PLC. A good understanding of the Windows operating system will be assumed. A Laptop computer with CX-Programmer v9.75 or newer installed and a USB cable is required. You must have administrator privileges to install software, drivers, and change the IP address on your PC.

Advanced PLC Training

The purpose of the Advanced PLC Training Course is to introduce an individual to the more advanced concepts of a PLC using a mixture of lectures and hands on labs. The topics that are covered in the Advanced PLC training course are as follows: BCD, DEC, HEX and Binary conversions; PLC instructions including MOV, ++B, --B, CMP, >, <, SFT, DIFU, KEEP, SET, RSET, +B, -B, +BL, SCL; and indirect addressing. The hardware used in the class will be the Omron CJ2M PLC. You must have a good understanding of the Windows operating system and the CX-Programmer software. A Laptop computer with CX-Programmer v9.75 or newer installed and a USB cable is required. You must have administrator privileges to install software, drivers, and change the IP address on your PC.

PLC Function Block Class

The purpose of the PLC Function Block is to introduce an individual to the basic concepts of a Function Block (FB) using a mixture of lectures, hands on labs, and simulation software. This course is designed for the individual with little or no prior FB programming experience. The topics that are covered in the FB training course are as follows: description of a function block; advantages of using a function block; different component names within a function block; ladder function blocks; structured text function blocks; and different programming formats. You must have a good understanding of the Windows operating system and the CX-Programmer software. A Laptop computer with CX-Programmer v9.75 or newer installed and a USB cable is required. You must have administrator privileges to install software, drivers, and change the IP address on your PC.

Sysmac Studio Operations

The purpose of the Sysmac Studio Operations course is to introduce an individual to the basic concepts of Sysmac Studio, troubleshooting, and programming using a mixture of lectures and hands on labs. This course is designed for the individual with little Omron MAC (PLC) programming experience. The topics that are covered in the Sysmac Studio Operation course are as follows: History of PLCs; hardware layout; configuration of the NX1P2 via Sysmac Studio; the Omron I/O tag based addressing scheme; functions; function blocks; variables; arrays; structures; unions; searching; inline structured text; Sysmac Studio programming software; entering and debugging of a basic ladder logic program; and basic trouble shooting techniques. The hardware used in the class will be the Omron NX1P2 MAC(PLC). The class will be structured towards software navigation & basic online functions. The third day of the class will be structured towards learning how to program. You must have a good understanding of the Windows operating system. A Laptop computer with Sysmac Studio v1.43 installed and a USB cable is required. You must have administrator privileges to install software and change the IP address on your PC.

Sysmac Studio Programming

The purpose of the Sysmac Studio Programming course is to introduce an individual to the basic concepts of Sysmac Studio and programming using a mixture of lectures and hands on labs. This course is designed for the individual with little Omron MAC (PLC) programming experience. The class will be structured towards learning how to program. You must have a good understanding of the Windows operating system. A Laptop computer with Sysmac Studio v1.43 installed and a USB cable is required. You must have administrator privileges to install software and change the IP address on your PC.

Description	Dates
Sysmac Studio Operations	March 9th & 10th
Sysmac Studio Programming	March 16th
Maintenance PLC	March 30th
Basic PLC	April 6th & 7th
Advanced PLC	April 20th & 21st
PLC Function Block	April 27th
Sysmac Studio Operations	May 11th & 12th
Sysmac Studio Programming	May 18th
Sysmac Studio Operations	Sept 7th & 8th
Sysmac Studio Programming	Sept 14th
Maintenance PLC	Sept 28th
Basic PLC	Oct 5th & 6th
Advanced PLC	Oct 19th & 20th
PLC Function Block	Oct 26th
Sysmac Studio Operations	Nov 9th & 10th
Sysmac Studio Programming	Nov 16th
G9SP / NE1A	As Required
Yaskawa V1000 / GA500	As Required

Also check out our website for an up-to-date list of available classes and to register-

www.lakewoodautomation.com

LAKWOOD AUTOMATION

27911 CLEMENS ROAD

WESTLAKE, OHIO 44145

PHONE (440) 808 4820

FAX (775) 254 4047

technical@lakewoodautomation.com



2022 TRAINING SCHEDULE

G9SP/NE1A Safety Controller

Lakewood Automation and Omron STI cordially invite you to a safety workshop introducing the new G9SP Programmable Safety Controller. In this hands-on workshop you will learn how to wire, program and troubleshoot with the G9SP Safety Controller. You will also increase your knowledge of the benefits of using a Programmable Safety Controller including:

- * Reduced inventory
- * Easier troubleshooting
- * Increased safety
- * Increased productivity

YASKAWA V1000/GA500 VFD

Training Course is to introduce an individual to the basic concepts of a Variable Frequency Drive (VFD) using a mixture of lectures, hands on labs, and simulation software. This course is designed for the individual with little or no prior VFD experience. The topics that are covered in the course are as follows: drive sizing based upon Horsepower of the motor or Kilowatts of the motor; installation practices; specifications of the VFD; electrical installation including wiring; programming of the most common parameters; troubleshooting; Drive Wizard Industrial software use; and sample application examples. A good understanding of the Windows operating system will be assumed. A Laptop computer with Drive Wizard Industrial installed and a 9 pin serial port or adaptor is required.

Billing and Cancellation Policy

Lakewood Automation reserves the right to cancel or change training dates and will not be held liable for any expenses, loss of income, or inconvenience caused.

All classes will be invoiced or cancelled 14 days before the class begins. If you need to cancel, it must be done before this date.

All No Charge classes will be billed \$200 for a no show or cancelling within 48 hours of the class. If you attend the class there will be no charge.