



**STANDARD ELECTRIC**  
**UNIVERSITY**  
Technical Classes Catalog

**2019-20**

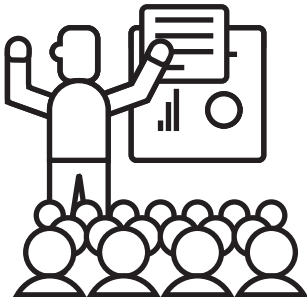


# Bringing you the training you need - when you need it!

Offering the latest in technical information and education to our customers is a priority at Standard Electric Supply Co. We began Standard Electric University in 2018 as a means to provide ample opportunities for you to stay abreast of the latest technologies and innovations.

We provide hands-on, classroom style training environments at our local offices, making it convenient for you to attend. We also offer webinars which allows you to receive training and information without leaving the office.

Our classes cover a wide array of technical topics including electrical, safety, and code related sessions to automation, HMI, PLC, and robotic innovations and techniques. Whether you or your team need to solve an immediate problem, quickly enhance your skills on new technology, or need an in-depth, intensive information session, our classes and webinars are your solution.



Providing you with these training opportunities reinforces our commitment to provide you with fanatical customer service. If you don't see the training you are looking for, let us know. We will do our best to meet your need.

If you have an interest in our offered classes or you would like a class customized to meet your specific needs, contact Joanne Moss at (888)-920-5572.





## Course Schedule

All classes are presented by Standard Electric engineers and our valued supplier partners.

**APL = Appleton | CHI = Chicago | INDY = Indianapolis | MKE = Milwaukee**

**WAR = Warsaw, IN**

Week of	Description	Location
<b>2019</b>		
August 12-16/19-13	Class: Lock Out for Life	APL/CHI/INDY/MKE
September 9-13	Webinar: From Legacy To Cloud	
October 7-11	Class: A Guide to ISO14119	APL/MKE
November 11-15	Webinar: Expert Hours 19: Wiring and grounding	
December 9-13	Class: Improving Electrical Safety with Short Circuit Protection	APL/MKE/WAR
<b>2020</b>		
January 6-10	Webinar: Dialight Case Studies	
February 10-14	Class: Safety by Design for LOTO	APL/MKE
March 9-13	Webinar: Dialight LEDs 101 (Industrial LED Lighting)	
April 13-17	Class: I/O Link - What is it and how can it improve your bottom line?	APL/MKE
May 11-15	Webinar: Expert Hours 01 & 05: Harmonics	
June 8-12	Class: Trouble Free Drive Installation	APL/MKE
August 10-14	Class: Key Impact of UL61800-5-1 Replacing UL 508C	APL/MKE
October 12-16	Class: Achieving higher short circuit current ratings for industrial control panels	APL/MKE
December 7-11	Class: NEC 500-516 Hazardous Location Methods and Code	APL/MKE

### Appleton Office

3111 East Capitol Drive  
Appleton, WI 54911  
920-730-8800

### Chicago Office

1055 Stevenson Court  
Roselle, IL 60172  
630-860-0236

### Indianapolis Office

9900 Westpoint Drive, Suite 142  
Indianapolis, IN 46256  
317-773-0400

### Milwaukee Office

222 N. Emmer Lane  
Milwaukee, WI 53233  
414-272-8100

### Warsaw Office

960 Executive Drive  
Warsaw, IN 46580  
630-860-0236

## *In-Person Class Descriptions*



### **A Guide to ISO14119 // October 2019**

This class will give a guide into using ISO14119 for machine safety and cover the following topics:

- » Introduction to the standard
- » Classification of Safety Devices and
- » Actuator Coding
- » Series Connection and fault masking
- » Explanation of Conditional Unlocking and when to use it
- » Extra Measures to ensure you meet proper category level.
- » Measures against defeat

Attendees will leave with a keen understanding of ISO 14119 and be able to choose the correct type of safety interlock as well as measures to stop defeat. If you are in a machine safety design building or your role is a designer or controls engineer, this class is ideal for you. Sponsored in collaboration with Euchner.

### **Achieving Higher Short Circuit Current Ratings for Industrial Control Panels // October 2020**

New requirements of NEC 409.22 and 670.5 make it very clear that end users must specify an adequate SCCR (Short Circuit Current Rating) for their industrial control panels and machine control panels.

- » Learn how the choice of the right fuse can easily raise SCCR to safe levels
- » Review the importance and safety implication of adequate SCCR
- » Provide a simple overview of low voltage UL listed current limiting fuses
- » Demonstrate how UL 508A Supplement SB is used to determine panel SCCR
- » Give examples of how the use of type-tested components and current limiting fuses can increase panel SCCR

Attendees will leave with a keen understanding of short circuit protection, relevant code requirements, and how to increase SCCR of panels using UL508A. If you are in equipment manufacturing, panel building or industrial maintenance or your role is a designer, engineer, or electrician this class is ideal for you. Sponsored in collaboration with Mersen.

### **I/O Link - What is it and how can it improve your bottom line? // April 2020**

IO-Link is a simple, flexible, and secure open communication technology that enables continuous communication at the sensor level. Attendees will learn more about:

- » Flexible and secure open sensor communications
- » Reducing inventory
- » Increasing efficiency
- » Enabling benefits of IIoT connectivity

Attendees will leave with an important understanding of I/O Link and its capabilities to decrease engineering time and increase efficiency. If you are any type of engineer involved with sensor technology, you will benefit from this class. Sponsored in collaboration with Pepperl & Fuchs.

## *In-Person Class Descriptions*



### **Improving Electrical Safety with Short Circuit Protection // December 2019**

New incident energy equations in the 2018 edition of IEEE 1584 may provide different results than existing arc flash studies. Learn what “electrode configuration” means for the data collection step of your next analysis.

- » Learn why NFPA70E dropped the 240V exception for arc flash analysis and what to expect with proposed changes to IEEE1584
- » Gain insight into what is meant by “exposed to the arc flash hazard” and who may be affected
- » Learn why and what options you have to lower energies to “Category 0” Level
- » Review a simple primary fuse change that can help lower energies to below “Category 3” PPE levels at substations that have incident energies much greater than 40 cal/cm<sup>2</sup>.
- » Review a simple “5S” program to ensure safe fuse replacements

Attendees will leave with a keen understanding of electrical hazards from overcurrents, protection against those hazards, and choosing a UL Fuse class. If you are in industrial maintenance, electrical contracting, or electrical consulting or your role is an electrician, maintenance or engineering, this class is ideal for you. Sponsored in collaboration with Mersen.

### **Key Impact of UL61800-5-1 Replacing UL 508C // August 2020**

UL 508C is being replaced at the request of the industry with UL61800-5-1. This new standard was effective February 1, 2016 and clarifies test methods and definitions of how ratings are obtained. Upon completion, you will be able to:

- » State the new UL standard number relating to short circuit ratings for VFDs
- » Explain the goal of the new UL standard
- » State if the prospective short circuit current can impact a VFD
- » Explain if an enclosure can help obtain higher short circuit current ratings
- » Determine if short circuit current ratings with circuit breakers are available for VFDs

This seminar will cover the reasons this new standard is being implemented and how it will help better choose proper equipment. Sponsored in collaboration with Schneider Electric.

### **Lockout for Life // August 2019**

Brady’s Lockout/Tagout - Best Practice Training offers comprehensive instruction on how to implement a successful lockout/tagout program across your organization. We will cover:

- » Regulation Review
- » Elements of a compliant Lockout Program
- » Machine Specific Procedures Best Practices
- » Review of Lockout, Tagout Devices
- » Video: Reinforces Regulations, best practices, and accident prevention

Attendees will learn about key areas which can take their LOTO program from “good to great,” especially related to Equipment Specific Lockout Procedures, Training, and Devices. If you are in Maintenance or Safety or are an Electrical or Mechanical Contractor, this class is ideal for you. Sponsored in collaboration with Brady.



## *In-Person Class Descriptions*



### **NEC 500-516 Hazardous Location Methods and Code // December 2020**

In this class, you can expect to further understand how NEC 500-516 is laid out to make referencing these articles easier.

- » Demonstrate installation methods and maintenance of Nema 7 & 9 enclosures
- » Deep dive into seal-off application demonstrating newest installation methods
- » Highlight installation exceptions found in articles 500-516

Attendees will leave with a keen understanding of classes, divisions, and groups as designed by the NEC. If you are in oil and gas, waste water treatment, or heavy industrial, or if your role is an Electrical Engineer, Project Manager, or Field Electrician, this class is ideal for you. Sponsored in collaboration with Lakeshore Electric.

### **Safety By Design for LOTO // February 2020**

This class offers the best practices in industry today to reduce and eliminate risk in your LOTO procedures. Both Electrical & Mechanical will be discussed. Participants will get a better understanding of today's Standards.

- » Risk Control hierarchy and the 6 stages
- » Methods to Mitigate risk/ Eliminate risk
- » Risk reductions when no other options exist

Attendees will leave with a keen understanding of opportunities to reduce Risk using the Risk Control Hierarchy, today's best practices and drive productivity to new levels in their LOTO Procedures. If you are an Electrician, Maintenance Worker or member of the Corporate Safety Team this class is ideal for you. Actionable improvements are delivered providing cost savings and reduced time for the Lockout. Sponsored in collaboration with Grace Engineered.

### **Trouble Free Drive Installation // June 2020**

Learn best practices as it relates to a VFD as well as an overview of operation and motor control. You will learn:

- » Features and benefits of VFD cabling (fast switching IGBTs and extending motor's life)
- » Proper termination practices
- » NFPA 79 (edition 2018) VFD cable considerations
- » Overview of operation and motor control
- » Best installation practices with your VFD
- » How to minimize harmonics and the potential need for an 18-pulse design
- » Why is filtering important

You will learn the proper VFD cabling practices, NFPA 79 VFD cable considerations, how to minimize harmonics and where to properly apply VFD filters/reactors. If you are in any industry using VFD products, this class is for you. If your role is maintenance, engineering or technician working on VFDs, this class would be ideal for you. Sponsored in collaboration with ABB.



## Webinar Descriptions

### **Dialight Case Studies // January 2019**

The purpose of this webinar is to understand the value in both energy/maintenance savings and safety that LED lighting can bring to someone seeking cutting-edge lighting at their facility. Our goal is to:

- » Understand the different types of applications that use LED lighting
- » Offer insight into the way LED value can be sold against legacy lighting
- » Review case studies that focus on different aspects including safety, maintenance, ROI, aesthetic, technology, and energy reduction

Attendees will leave with a keen understanding of LED industrial lighting versus traditional lighting and the benefits LED lighting presents. If you are in heavy industrial manufacturing, pulp and paper, power generation, or any hazardous environment field or your role is engineering, maintenance, production, or safety this class is ideal for you. Sponsored in collaboration with Dialight.

### **Industrial LED Lighting // March 2020**

Understand the benefits of industrial LED lighting over traditional lighting technologies such as Metal Halide, High Pressure Sodium, Induction, and Fluorescent in Harsh & Hazardous locations related to Energy, Maintenance, Safety, and the Environment. Presentation Overview:

- » The burden of industrial lighting
- » Conventional lighting review
- » Industrial LED lighting
- » The Future of LED Technology
- » Real World case study examples

Attendees will leave with a keen understanding of LED industrial lighting versus traditional lighting and the benefits LED lighting presents. If you are in heavy industrial manufacturing, pulp and paper, power generation, or any hazardous environment field or your role is engineering, maintenance, production, or safety this class is ideal for you. Sponsored in collaboration with Dialight.

### **Expert Hours 01 & 05: Harmonics // May 2020**

Current harmonics, produced by electrical equipment (e.g., adjustable speed AC and DC drives), can distort power in an entire facility. Effects can include nuisance tripping, lighting issues, UPS failures, generator faults and other electrical-related issues.

- » Find out how harmonics change with load
- » Learn how to measure them
- » How do harmonics impact other plant equipment

Attendees will leave with a keen understanding of what are harmonics, why they are bad for a plant network and what methods can be used to mitigate their impact. If you are in the paper industry, machine manufacturing or utilities field or your role is maintenance or engineering, this class is ideal for you.



## Webinar Descriptions

### Expert Hours 19: Wiring and Grounding // November 2019

Learn wiring best practices as they relate to VFD's and why proper wiring techniques and proper cabling methods are necessary to ensure a trouble-free installation. You will learn:

- » Why VFD rated cable is always the best choice
- » Types of cables for the control and power of wires
- » Proper termination practices for VFDs
- » NFPA 79 (2018) VFD cable considerations

If you maintain, install or specify VFD's or if you are in plant maintenance or engineering this session is for you.

### From Legacy to IIoT - The Complete Strategy // September 2019

Bringing your existing data from the plant floor to the cloud and back.

- » Legacy products connected to PLCs, drives, HMIs
- » Networking - Lan's-protocol conversion
- » Cloud connectivity and products you need
- » Remote access via cellular

Attendees will leave with a keen understanding of connectivity to their intelligent devices, and the hardware needed. If you are in engineering, technical support, maintenance, or production, this webinar is ideal for you. From the plant floor, to system integration and machine building, there are products that can make your job easier, more efficient and increase productivity. Sponsored in collaboration with Red Lion.





## *How to Register for Courses*

-Register online at [www.standardelectricsupply.com](http://www.standardelectricsupply.com)

-Call **800-776-8222**

-(or) Email this form to [jmoss@standardelectricsupply.com](mailto:jmoss@standardelectricsupply.com)

Name: \_\_\_\_\_

Company: \_\_\_\_\_ Job Title: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Email: \_\_\_\_\_ Phone: \_\_\_\_\_

Course Location: \_\_\_\_\_

Course Date: \_\_\_\_\_