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Current Course List

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- Introduction & Implementation of NFPA[®] 70 E-2015 – available in 6, 8, 12 & 16 hour training sessions
- Introduction & Implementation of NFPA[®] 70 E-2015 and SCC Calcs – available in 6 & 8 hours
- Analysis of Changes 2014 NEC[®] – available in 6, 8, 12 and 16 hour training sessions
- Grounding and Bonding 2014 NEC[®] – available in 6, 8, 12 and 16 hour training sessions
- Advanced Grounding & Bonding – Beyond the Basics 2014 NEC[®] – 6 hours & 8 hours
- Grounding & Bonding Information Technology Equipment 2014 NEC[®] – 6 hours
- Commercial Electrical Service and Feeder Calculations 2011 NEC[®] – 6 hours
- Conductors, Protection, and Short-Circuit Current Calculations 2011 NEC[®] – 6 & 8 hours
- Motors, Conductors and Protection 2011 NEC[®] – 6 hours & 8 hours
- Box & Conduit Fill, Pull Box, Wireway & Voltage Drop Calculations 2011 NEC[®] – 6 & 8 hours
- Hazardous Classified Locations 2014 NEC[®] – 6 hours & 8 hours
- Health Care Facility Electrical Provisions 2011 NEC – 4, 6, & 8 hours
- Understanding Articles 700, 701 and 702 – 2014 NEC – 6 hours & 8 hours
- Swimming Pools, Spas, Hot Tubs and Hydromassage Bathtubs 2014 NEC[®] – 6 & 8 hours
- Preparing for Dwelling Electrical Inspections 2014 NEC[®] – 4, 6, 8, 12, & 24 hours
- Preparing for Dwelling Electrical Inspections 2015 IRC[®] – 4, 6, 8, 12, & 24 hours

This list of courses represents training most often requested and utilized for both public and private training. Topics can also be based on other editions of the NEC[®] or the IRC[®]. Additional training topics are constantly in development and other topics are available on request. Training topics which are not based upon the latest Code revision are in the process of being updated.

Introduction & Implementation of NFPA® 70 E-2015

This introduction and in-depth overview provides insight into the workplace electrical safety requirements of the NFPA® document 70E-2015. This PowerPoint assisted training addresses document layout, content, history, terminology, and its integration for OSHA compliance, as well as significant revisions from the previous 2012 document publication. Attendee coursework provides reference during training and a valuable resource upon training completion. The NFPA 70E® document, as a standard, mandates minimum workplace electrical safety requirements for both qualified and unqualified workers employed in general industry as well as the construction industry. This course will address the hazards associated with electric shock, arc flash, and arc blast, mitigating those hazards, personal protective equipment selection, and determining the protection boundaries. The training addresses the hidden questions regarding what is necessary for compliance, and what steps must be achieved to obtain compliance. This course is especially suited for master and journeyman electricians, design professionals, company compliance officers, enforcement personnel, maintenance personnel, and others with a need-to-know regarding mandated workplace electrical safety to ensure worker safety and OSHA compliance.

This training is available in 6, 8, 12 and 16 hour training sessions, and can be customized to include changes significant to a particular audience.

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Introduction & Implementation of NFPA® 70 E-2015 and SCC Calcs

This introduction and in-depth overview provides insight into the workplace electrical safety requirements of the NFPA® document 70E-2015. This PowerPoint assisted training addresses document layout, content, history, terminology, and its integration for OSHA compliance, as well as significant revisions from the previous 2012 document publication. Attendee coursework provides reference during training and a valuable resource upon training completion. The NFPA 70E® document, as a standard, mandates minimum workplace electrical safety requirements for both qualified and unqualified workers employed in general industry as well as the construction industry. This course will address the hazards associated with electric shock, arc flash, and arc blast, mitigating those hazards, personal protective equipment selection, and determining the protection boundaries. The training addresses the hidden questions regarding what is necessary for compliance, and what steps must be achieved to obtain compliance. Calculating the available short-circuit current and understanding overcurrent protection device clearing time is necessary for PPE category determination when performing tasks where an 'incident energy analysis' has not been performed. This course is especially suited for master and journeyman electricians, design professionals, company compliance officers, enforcement personnel, maintenance personnel, and others with a need-to-know regarding mandated workplace electrical safety to ensure worker safety and OSHA compliance.

This training is available in 6, 8, 12 and 16 hour training sessions, and can be customized to include changes significant to a particular audience.

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Analysis of Code Changes to the 2014 NEC®

This overview and analysis provides a jumpstart into the more significant changes which impact all electrical work. Over 3,700 proposals and 1,600 public comments, processed by twenty code making panels, have shaped the 2014 NEC® into a code unlike its predecessor. While all of the changes cannot be covered in this training event, this course is intended to provide detail into the more significant changes adopted into the 2014 National Electrical Code NEC®. Specific changes can be addressed which impact a particular state, region, or jurisdiction. The accompanying coursework, "Analysis of Changes, 2014 NEC®", published by the International Association of Electrical Inspectors® (IAEI®) provides attendees with "up-close-and-personal" insight and detailed reference into approximately 300 of the more crucial changes to this latest version of the NEC®. While NEC® codebooks may be helpful and always recommended, this course is designed to provide all the necessary information to explain and understand the latest changes without additional materials. The PowerPoint presentation and the coursework provided for this training will ensure maximum exposure to the more significant changes and allow for attendees to reference all of the significant changes (with accurate and authoritative interpretations) easily after the seminar via the detailed coursework published by IAEI®. This course is especially suited for contractors, tradesmen, design professionals, code officials, and individuals with a "need-to-know" regarding the latest version of the NEC®. Attendees will be able to recognize and analyze the changes which impact both new and existing electrical installations. Participants may find highlighters and sticky notes useful during this course (not provided). (Note: Contact hours and potential discussion will dictate the quantity of changes covered in order of their significance.)

This training is available in 6, 8, 12 and 16 hour training sessions, and can be customized to include changes significant to a particular audience. Attendee handout material could consist of the NEC® as an alternative to the IAEI® coursework noted in the description. This topic can address other NEC® revision cycles.

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Grounding and Bonding under the 2014 NEC®

This in-depth overview on grounding and bonding provides review into the most misunderstood region of the National Electrical Code®. The accompanying coursework "Soares Book on Grounding and Bonding 12th Edition", published by the IAEI® provides attendees with up-close-and-personal instruction into the mystery surrounding the grounding and bonding of electrical systems. While all of the material cannot be covered in a single session, this course will provide excellent detail into the more relevant, most-frequently used applications surrounding the grounding and bonding requirements. NEC® codebooks may be helpful and always recommended, but this course is designed to provide all the necessary information to explain and comprehend Article 250 and related articles of the NEC® without additional materials. The PowerPoint presentation and the attendee coursework will ensure maximum exposure to the material covered and provide attendees future reference after the seminar via the detailed coursework published by IAEI®. This course is especially suited for contractors, tradesmen, design professionals, code officials, and anyone who still has questions about the grounding and bonding of electrical systems. Attendees will have maximum exposure to the most authoritative information available on the most mysterious portions of the National Electrical Code®. (Note: Course contact hours will dictate content depth and detail.)

This training is available in 6, 8, 12 and 16 hour training sessions, and can be customized to include changes significant to a particular audience.

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Advanced Grounding and Bonding under the 2014 NEC®

Advanced instruction on grounding and bonding is designed to take over where basic grounding and bonding instruction typically ends. The advanced training provides specific review and in-depth detail into the most misunderstood region of the National Electrical Code®. The accompanying coursework "Soares Book on Grounding and Bonding 12th Edition", published by the IAEI® provides attendees with up-close-and-personal instruction into the theory and application surrounding the specific grounding and bonding of electrical systems, with additional in-depth detail into specific grounding and bonding requirements for specific applications and occupancies, as well as the theory and application of clearing ground faults and short circuits. Depending upon actual course length, specific grounding and bonding for areas of hazardous (classified) locations, pools, spas hot tubs and hydromassage bathtubs, agricultural buildings, health care, ground-fault protection of equipment theory and application, ground fault circuit interrupter theory and application, information technology (electronic) equipment grounding and bonding theory and application, resistance and reactance grounding theory and application, low-voltage and intersystem grounding and bonding, grounding and bonding for over 1,000-volts, and fundamentals of lightning protection will be covered in detail (individual topic coverage, detail and depth is course time frame dependent). This course will provide excellent detail into the more specific, least-frequently used and less familiar applications surrounding the grounding and bonding requirements. NEC® codebooks may be helpful and are always recommended, but this course is designed to provide all the necessary information to explain and comprehend specific and detailed advanced grounding and bonding governed by the NEC® without additional materials. The PowerPoint presentation and the accompanying attendee coursework will ensure maximum exposure to the material covered and provide attendees future reference after the seminar via the detailed coursework published by IAEI®. This course is especially suited for contractors, tradesmen, design professionals, code officials, and anyone who has questions about specific grounding and bonding of atypical electrical systems and occupancies. Attendees will have maximum exposure to the most authoritative information available on the most mysterious portions of the National Electrical Code®.

This training is available in 6, 8, 12 and 16 hour training sessions, and can be customized to include changes significant to a particular audience.

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Grounding and Bonding Information Technology Equipment - 2014 NEC®

Article 645 of the 2014 NEC® governs equipment, power-supply wiring, equipment interconnection wiring, and grounding of information technology equipment and systems, in an information technology (IT) equipment room. This introduction and overview will provide introduction and additional insight into grounding, bonding, equipment installation and power wiring of this specialized and unfamiliar area of the NEC®. With material developed by the International Association of Electrical Inspectors® (IAEI®), both depth and clarity of subject matter can be assured. This course begins with the basic necessities and understanding of grounding and bonding before getting technical and specific with IT and is well suited for attendees with limited IT subject knowledge. The PowerPoint presentation and the coursework provided will ensure maximum exposure to the material covered and provide attendees future reference after the seminar via the detailed coursework published by IAEI®, "Soares 12E book on Grounding and Bonding".

This training is available in 6 and 8 hour training sessions.

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Commercial Electrical Service and Feeder Calculations, 2011 NEC®

Commercial Electrical Service and Feeder Calculations is an in-depth course designed to provide attendees the knowledge and tools necessary to perform calculations for commercial electrical services and feeders. This class follows a step-by-step process for determining the minimum electrical service and feeder requirements based upon both General and Optional methods of calculations depicted in the 2011 NEC® (NFPA 70). While NEC® codebooks (always recommended) and calculators may be helpful, this course is designed to provide all the necessary information and coursework to explain, comprehend, and complete the calculations without additional materials. This in-depth course is especially suited for design professionals, code officials, as well as master and journeyman electricians. The coursework, published by C&M Enterprises, provides complete detailed descriptions of the code sections leading to the calculation process and has proven to be valuable reference for future calculations or review.

This training is available in 4 and 6 hour training sessions, but is best covered in the 6 hour session.

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Conductors, Protection and Short-Circuit Current Calculations under the 2011 NEC®

This course provides in-depth overview and instruction into the 2011 NEC® requirements surrounding conductor selection, conductor protection, and the calculation of available short-circuit current. Conductor selection includes determination of type and size, based upon the actual conditions of use. Multiple factors impacting a conductor's true ampacity will be explored in-depth. Determination of compliant distribution equipment requires understanding and calculating the available short-circuit current; as well as the implications of equipment ratings. Instruction is focused on in-depth exploration of the relevant Code Sections which result in compliant installations. This training is well suited for electrical contractors, craftsmen, design professionals, enforcement, plan reviewers, and anyone in need of expanding their understanding and comprehension of compliant conductor selection, conductor protection, and distribution equipment selection based on the 2011 NEC®.

This training is available in 6 and 8hour training sessions.

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Motors, Conductors and Protection under the 2011 NEC®

This in-depth code based instruction provides specific user information for the general application of motors, motor conductors, and motor protection. Specific sizing and protection requirements of various motor circuit componentry, which is found in the typical motor circuit, is outlined in a detailed step process revealing both the calculation requirements and governing code sections related to motor circuit componentry sizing and based upon the requirements of the 2011 NEC®. While NEC® codebooks (always recommended) and calculators may be helpful, this course is designed to provide all the necessary information and coursework to explain, comprehend and complete the motor circuit componentry selection process without additional materials. The coursework, published by C&M Enterprises, contains additional calculation procedures necessary for general commercial and industrial construction. This course is especially suited for master and journeyman electricians, design professionals and others with a need-to-know regarding some the basic motor circuit selection and calculation processes required for NEC® compliance.

This training is available in 6 and 8 hour training sessions.

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Box & Conduit Fill, Pull Box, Wireway, Auxiliary Gutter, and Voltage Drop Calculations under the 2011 NEC®

This in-depth code based instruction provides specific user information for the general application of the relevant NEC® requirements related to outlet, device box, & conduit body fill, pull box, wireway and auxiliary gutter requirements, and voltage drop calculations. Specific sizing and calculation requirements based upon the 2011 NEC® will be addressed in detail. While NEC® codebooks (always recommended) and calculators may be helpful, this course is designed to provide all the necessary information and coursework to explain, comprehend and complete the the relevant compliance requirements and calculations without additional materials. The coursework, published by C&M Enterprises, contains additional calculation procedures necessary for general commercial and industrial construction. This course is especially suited for master and journeyman electricians, design professionals and others with a need-to-know regarding some the basic motor circuit selection and calculation processes required for NEC® compliance.

This training is available in 6 and 8 hour training sessions.

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Hazardous Classified Locations, 2014 NEC®

This overview on hazardous locations provides both entry level introduction and in-depth review into the 2014 NEC® requirements for hazardous locations governed under Articles 500 through 516. This course specifically addresses the impact of changes and modifications to hazardous location installations which result from the latest 2014 NEC® revision cycle. The accompanying provided coursework "Hazardous Locations 4th Edition", published by the IAEE®, provides attendees with up-close-and-personal instruction into the specifics surrounding electrical installations in and about hazardous locations. While all of the material cannot be covered in a single session, this course will provide excellent introduction and detail into the more relevant, most-frequently used applications surrounding hazardous location requirements. NEC® codebooks may be helpful and always recommended, but this course is designed to provide all the necessary information to explain and comprehend Articles 500 through 516 and related articles of the NEC® without additional materials. The PowerPoint presentation and the provided coursework will ensure maximum exposure to the material covered and provide attendees future reference, after the training, via the detailed coursework published by IAEE®. This course is especially suited for contractors, tradesmen, design professionals, code officials and anyone who may be involved in hazardous location electrical installations. Attendees will have maximum exposure to the most authoritative information available on the most mysterious portions of the National Electrical Code®. (Note: This training may be tailored to address Class I locations or alternatively to address Class II and III locations.).

This training is available in 4, 6 and 8 hour training sessions, but is best covered in the 8 hour session.

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Healthcare Facility Electrical Provisions under the 2011 NEC®

This course provides in-depth overview and instruction into the 2011 NEC® requirements of Article 517, and related NEC® Articles as they pertain to the electrical provisions for health care facilities. Attendees will gain exposure, valuable insight and become familiar with the NEC®'s seven parts of Article 517 which include provisions for health care facility electrical general requirements, definitions, wiring and protection, essential electrical systems, inhalation



anesthetizing locations (basic overview), X-Ray installations, communications, signaling and fire alarm systems, and isolated power systems. While utilizing PowerPoint presentation instruction material developed by the International Association of Electrical Inspectors® (IAEI®), attendees will have exposure to authoritative information on health care facility electrical installations and requirements. Health care facility electrical installations will generally require compliance with electrical provisions contained within NFPA's document 99-2015, the 'Health Care Facilities Code' recognized as establishing criteria (among others) to minimize hazards associated with electricity within health care facilities. While NFPA 99-2015 introduction and compliance will be addressed as appropriate during the day's training, instruction is centered on the in-depth overview of the NEC®'s Article 517 and other applicable NEC® requirements. This training is well suited for electrical contractors, craftsmen, design professionals, enforcement, plan reviewers, and anyone in need of expanding their understanding and comprehension of healthcare facility electrical requirements. (Note: Additional time frame permits additional depth and explanation of various parts of Articles 517 & 700.)

This training is available in 4, 6, and 8 hour training sessions, but is best covered in the 8 hour session. Noteworthy is that due to dramatic changes to the parent document (NFPA® 99 and to the 2014 NEC®, this topic will have dramatic differences between training based upon the 2008 and the 2011 NEC®, as compared to the 2014 NEC®. [Back to top](#)

Understanding Articles 700, 701 and 702 under the 2014 NEC®

This unique training provides both overview and insight into the 2014 NEC® requirements for emergency systems, legally required standby systems, and optional standby systems, and their respective circuits. While industrial, commercial and even residential installations can employ such systems; this represents an area of unknown for many individuals. With such installations, a generator (or other alternate power source) is employed. As such, both alternate power source and transfer equipment provisions will be addressed. This training is well suited for electrical contractors, craftsmen, design professionals, enforcement, plan reviewers, and anyone in need of expanding their understanding and comprehension of the NEC®'s Article 700, 701, and 702 requirements. [Back to top](#)

This training is available in 4, 6, and 8 hour training sessions, and can be addressed for other revisions of the NEC®.

Swimming Pools, Spas, Hot Tubs and Hydromassage Bathtubs, 2014 NEC®

This course provides an in-depth overview of the 2014 NEC® requirements of Article 680, and related Articles as they pertain to swimming pools, spas, hot-tubs, hydromassage bathtubs, and fountains. Additional emphasis is placed on the requirements for grounding and bonding of these specific installations. Utilizing PowerPoint instruction, and attendee handout material, this training will provide insight and clarity into the NEC® compliance requirements for structures and equipment associated with these types of installations. This course is well suited for designers, installers, contractors, electrical craftsmen, and enforcement who may be involved in the approval or construction of such governable bodies of water, and their surroundings, which can be impacted by the NEC®'s Article 680. Due to the emphasis on grounding and bonding, this course is also well suited for non-electrical pool, spa, hot-tub, and fountain contractors and installers.

This training is available in 4, 6 and 8 hour training sessions, but is best covered in the 8 hour session.

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Preparing for Dwelling Electrical Inspections, 2014 NEC®

This unique Code based continuing education provides both overview and detailed insight into the electrical requirements for one and two family dwellings as depicted in the 2014 NEC®. This course is directed toward contractors, tradesmen and craft in need of approved CEUs for license renewal, but is also suitable for code enforcement and anyone in need of insight into the dwelling electrical provisions of the 2011 NEC®. The training details a "room-by-room walk-through tour" (from the perspective of code enforcement) of a typical one-family dwelling. This unique training approach reveals applicable NEC® code requirements for the rough-in, final, and service installation phases of the construction and inspection process. The visual PowerPoint training material was originally developed by the International Association of Electrical Inspectors® (IAEI®). Coursework is provided and consists of the IAEI® produced workbook material intended for use with the PowerPoint presentation. Codebooks are always recommended, but this training is intended to provide the necessary coursework. This particular training session will provide 8 contact hours of approved Code based continuing education for craftsmen and license holders in need of code based contact hours of instruction.

This training is available in 4, 6, 8, 12, and 24 hour training sessions. Alternatively, the NEC® can be utilized as attendee handout material.

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Preparing for Dwelling Electrical Inspections, 2015 IRC®

This unique Code based continuing education provides both overview and detailed insight into the electrical requirements for one and two family dwellings as depicted in the 2015 International Residential Code® (IRC®). This course is directed toward contractors, tradesmen and craft in need of approved CEUs for license renewal, but is also suitable for code enforcement and anyone in need of insight into the dwelling electrical provisions of the 2015 IRC®. The training details a "room-by-room walk-through tour" (from the perspective of code enforcement) of a typical one-family dwelling. This unique training approach reveals applicable IRC® code requirements for the rough-in, final, and service installation phases of the construction and inspection process. The visual PowerPoint training material was originally developed by the International Association of Electrical Inspectors® (IAEI®). Coursework is provided and consists of the IAEI® produced workbook material intended for use with the PowerPoint presentation. Codebooks are always recommended, but this training is intended to provide the necessary coursework. This particular training session will provide 8 contact hours of approved Code based continuing education for craftsmen and license holders in need of code based contact hours of instruction.

This training is available in 4, 6, 8, 12, and 24 hour training sessions. Alternatively, the IRC® can be utilized as attendee handout material.

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