



The
**Electrical
Board** of Missouri
and Illinois

EDUCATION COURSES 2011-12 SCHEDULE

THE INFORMATION BELOW IS TAKEN FROM OUR PRINTED EDUCATIONAL BROCHURES. IF YOU WOULD LIKE A PRINTED BROCHURE MAILED TO YOU, PLEASE EMAIL YOUR NAME AND ADDRESS TO annie@electricalboard.org OR CALL 636/305-6434.

WE HOPE THAT BY MAKING OUR CLASS SCHEDULE ACCESSIBLE VIA EMAIL, YOU CAN FORWARD THEM EASILY TO OTHERS IN YOUR COMPANY OR TO YOUR VALUED CUSTOMERS, WHO MAY BE LOOKING FOR THESE SEMINARS/CLASSES. WE ALWAYS HEAR FROM OUR ATTENDEES THAT THEY DID NOT KNOW THESE COURSES WERE AVAILABLE UNTIL THEY HEARD ABOUT IT THROUGH AN ELECTRICAL BOARD MEMBER OR PAST CLASS PARTICIPANT. BY WORKING TOGETHER, WE CAN LET MORE COMPANIES KNOW ABOUT THE ELECTRICAL BOARD'S EDUCATIONAL PROGRAM.



WE NEED YOUR HELP ...
 to “GO GREEN”!! Please take
TWO minutes to complete form
 below and forward to us!

We want to eliminate some of the booklets mailed and provide emailed version of this booklet. It lessens paper, the amount of booklets printed and increases flexibility to forward this information easier within your company and/or industry associates.

If you receive this booklet, but wish to ONLY receive an emailed copy, please make sure to fax this form to us at 636/305-6430 before September 20, 2011 or send your email to annie@electricalboard.org. OR if you have changes, deletions or wish to continue receiving by mail, please let us know this as well. We need to hear from you concerning this booklet and appreciate your assistance in “going green”.

Please fax to 636/305-6430, email to annie@electricalboard.org or mail to EBMI, 900 S. Highway Dr.-Ste. 306, Fenton, MO 63026. Thanks. PLEASE PRINT NAME AND EMAIL CLEARLY!!

I would prefer to receive this brochure via email and take my name off the education MAILING list.
Please PRINT CLEARLY your email below. This will allow you to also forward this brochure to industry associates easier.

- Please continue to mail this booklet to me at the address listed on the booklet.
- Please take the following names from our company off your mailing list or make the following changes: (email additional names if needed.)

Please add the following emails from others that you know of who wish to receive this information on classes.

YOUR NAME	EMAIL
COMPANY	PHONE

MORE POWER TO YOU...

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Electrical Board Accepts Mastercard, Visa and American Express

We also offer other seminars throughout the year including:

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Help US to "GO GREEN" MAILING FORM- INSIDE FRONT COVER

To: Industry Associates

From: Charlie O'Connell, Chairman
The Electrical Board Education Committee

The Electrical Board of Missouri and Illinois (EBMI) is entering its **34th year** of providing educational courses on various electrical topics to the industry.

We offer courses that provide useful and practical information. Hopefully, these courses will assist participants with the knowledge enhancement process, which is so vital to the continued success of the individual, and increase their contribution to their firm.

Our emphasis is on the **operation and applications** of the various electrical components being used in the industry. These courses are not intended as "manual skills training" for individuals but rather emphasize the theory, principles and applications associated with the various electrical components and systems that are discussed. Introduction of new and changing technologies will also be presented wherever possible.

If you have any questions concerning the courses, please call the Electrical Board office at 636/305-6434.

I UNDERSTAND THESE COURSES DO NOT ADDRESS WIRING SKILLS AND PROFICIENCIES, AND THAT THE ELECTRICAL BOARD, ITS OFFICERS AND INSTRUCTORS ARE HERE-BY RELEASED FROM ANY LIABILITY ARISING FROM ANY USE OR APPLICATION OF THE KNOWLEDGE GAINED FROM THESE SEMINARS/COURSES.

REGISTRATION PROCEDURES & CLASS INFO

- 1) Complete and sign enrollment form on page 16 and fax this form to 636/305-6430. To guard against paperwork tied up in your company, we recommend that all registrations be faxed to EBMI or mailed. This will reserve a place in this class, but your registration form and payment must be forwarded!
- 2) Even if you call in your registration, all information on the registration form **MUST** be completed thoroughly by the staff, so be prepared to take the time to do so by phone if you decide not to fax the form or email it to annie@electricalboard.org.
- 3) **An advanced rate is given ONLY if your REGISTRATION FORM is received 2 weeks prior of class.** (Payment can follow later.) If form is not received two weeks prior to class, the late registration fee will be applied.
- 4) **Payment must be received by the first night of class,** unless you call EBMI in advance to indicate payment is being processed within your company. We realize some companies cannot process as quickly, so we will work with you. We do accept Mastercard, Visa and AmEx, but because we do not want these numbers listed on forms, we ask that you fax over your registration form first, and then call us with your credit card information, 636/305-6434. We will forward a receipt to you.
- 5) Please understand that for reasons beyond our control, some classes may be cancelled and rescheduled, so **your class may go one or two weeks past the nights shown in the booklet.** Most of our instructors work full-time and assist us in the evening. Sometimes, they may be called out of town with business or the weather may deem it necessary to cancel class. We ask you to understand that the possibility for such changes might occur during your class and may cause you to go a few classes past the date scheduled in booklet.
- 6) **Courses will be canceled one week prior to class start, if there is not sufficient enrollment.** By canceling a week ahead, this allows others to transfer to another class if their 1st choice is not available. Each course has a minimum number of students that must be reached before we can offer it, so please make sure you send in your registration form early as this helps in determining if a class will be held! ONE registration can make a difference. Unfortunately, our class depends on advanced registration forms so we won't know if a class will run until about a week or so prior to start date. A 100% refund will be made for a class canceled by EBMI.
- 7) **Jefferson County PEU requirements are that students must attend 100% of the actual classroom instructions.** They will allow a student to be absent 10% of the required hours, but only for reasons of personal illness, illness or death in their immediate family or hazardous road conditions.

REFUND POLICY - If you withdraw before the class starts, we will refund the enrollment fee minus the registration fee. After the first night of class, you will receive 50% of enrollment fee. After the second night, 25% will be refunded. **No refunds will be made after the third night of class.** Substitutions can be made.

GRADING POLICY -Each student, provided they attend the required number of classes (80%) and perform coursework to pass the class, will receive a certificate of completion for this class. Many companies use this for reimbursement. However, if your company needs a letter showing the student's grade and attendance record, in addition to the certificate of completion or attendance, please check the attendance and grade information on registrations form. This must be done in advance of the class!! We must also be provided with contact name. If they attend the classes, but do not pass the course, they will receive a certificate of attendance. If they are unable to attend the required number of classes, they will not receive a certificate. Each instructor will go over the required number needed on the 1st night of class, so please pay close attention.

PRACTICAL APPLICATIONS OF ELECTRICAL EQUIPMENT & DEVICES

INFORMATION: This course provides a working knowledge of all segments of the electrical industry and how these segments interact in the construction and MRO markets. It gives a hands-on overview of electrical products and their applications for industrial, commercial and residential applications. It is ideal for warehouse, clerical and purchasing personnel (as well as entry level sales personnel) desiring an understanding of the electrical construction industry and its practical applications. It includes terminology and definitions put into laymen's terms for a basic understanding of our industry.

- | | |
|--|---|
| 1. Overview of the Electrical Industry | 5. Fastening & Supporting; Splicing & Terminating |
| 2. Distribution Equipment & Motor Controls | 6. Wiring Devices; Signaling Equipment; Lighting Controls |
| 3. Raceways, Boxes, Enclosures & Fittings | 7. Lamps & Lighting Fixtures |
| 4. Wire, Cables & Accessories | 8. Heating & Ventilating Equipment; Electricians' Tools |

TIME AND DATES:

Sept. Class
 Tuesday
 6:00-8:30 p.m.
 8 Sessions
 Begins Sep. 13, 2011
 and ends Nov. 1, 2011

Feb. Class
 Tuesday
 6:00-8:30 p.m.
 8 Sessions
 Begins Feb. 7, 2012
 And ends March 27, 2012

SEPT. LOCATION

Frost
 2429 Schuetz
 Maryland Heights, MO 63043

FEB. LOCATION

Frost
 2429 Schuetz
 Maryland Heights, MO 63043

INSTRUCTOR: Jay Ellington
 CDG Engineers

COST: Advanced - registrations must be received 2-weeks prior to class start.

	<u>Advanced</u>	<u>Late</u>
Employees of non-member firms	\$ 260	\$ 310
Employees of Electrical Board member firms	\$ 200	\$ 250

Includes study manual, certificate of completion and registration fee of \$75 which is non-refundable.

FUNDAMENTALS OF ELECTRICAL THEORY *(Held only in the Fall)*

Course information: The course is designed and will be taught to provide a fundamental understanding of the principles, terms, physical laws and mathematical concepts used to explain electrical circuit behavior. Areas covered will be an overview of D.C. and A. C electrical theory and introduces the student to electrical components and magnetic concepts, Ohm's Law, Kirchhoff's current and voltage Laws, and the calculation of single phase and three phase power. This instruction will be done with a short lecture on subjects and the class labs done by the students working as teams to obtain and record/analyze these results. Electrical and jobs site safety will also be covered for the students well being on jobsites. Labs will be taken from workbook. The companion main text will be the knowledge reference for lectures, which will be short and focused. Homework will be taken from workbook and instructor written questions. Questions will be completion type with emphasis on analyze and calculations. These will be used to determine satisfactory completion of course.

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|------------------------------------|-----------------------------------|
| 1. Math/Algebra review | |
| Basic Electrical Concepts | 6. Power in AC Circuits |
| 2. Basic Circuit Components | 7. Three Phase AC Circuits |
| 3. Circuits, Laws and Measurements | 8. Inductance |
| 4. Multiple-load Circuits | 9. Capacitance |
| 5. Magnetism and Electromagnetism | 10. Transformers, Motors (AC, DC) |

TIME AND DATES:

Sept. Class

Tuesday

6:00-8:30 p.m.

10 Sessions

Begins Sept. 13, 2011

ends on November 15, 2011

PLACE:

Electrical Board Office

900 S. Highway Dr.-Ste. 306

Fenton, MO 63026

INSTRUCTOR:

MILT MURRY

COST: Advanced - registrations must be received 2-weeks prior to class start.

	<u>Advanced</u>	<u>Late</u>
Employees of non-member firms	\$ 290	\$ 340
Employees of Electrical Board member firms	\$ 230	\$ 280

Includes study manual, certificate of completion and
registration fee of \$75 which is non-refundable.

UNDERSTANDING MOTOR CONTROLS *(Held only in the Spring)*

PDH: 20 /PEU: 10

INFORMATION: This course is designed to teach a fundamental understanding of standard Motor Control terminology and equipment design. The basic operation of various motors will be presented. However, the major emphasis of this course will be to understand how and why to correctly control a motor. Considerable emphasis will be placed on relating the physical motor control components to symbols on drawings and how they interrelate in schematic or ladder diagrams. Components discussed in this course will include, but not be limited to, circuit breakers, disconnects, fuses, starters, relays, timers, limit-switches, push buttons, starting transformers and enclosures.

- | | |
|--|--|
| 1. Basic Principles | 6. Operation of Control Devices,
Reversing a Three-Phase Motor
and Transformer |
| 2. Industrial Symbols & Line Diagrams | 7. Solid State Control Devices |
| 3. Short Circuit Protection Devices | 8. Programmable Controllers |
| 4. Introduction to Logic as Applied to
Line Diagrams & Motor Starters | 9. Maintenance and Troubleshooting |
| 5. Solenoids, AC/DC Contactors and
Motor Starters, Timers | 10. Review and Final Exam |

TIME AND DATES:

No September class

Feb. Class
Tuesday
6:00-8:00 p.m.
10 Sessions
Begins Feb. 7, 2012
and ends April 10, 2012

PLACE:

Electrical Board Office
900 S. Highway Dr.-Ste. 306
Fenton, MO 63026

INSTRUCTOR:
JERRY ESSELMAN

COST: Advanced - registrations must be received 2-weeks prior to class start.

	<u>Advanced</u>	<u>Late</u>
Employees of non-member firms	\$ 290	\$ 340
Employees of Electrical Board member firms	\$ 230	\$ 280

Includes study manual, certificate of completion and
registration fee of \$75 which is non-refundable.

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VARIABLE FREQUENCY DRIVES

PDH: 16 / PEU: 8

INFORMATION: This course is designed to provide a practical knowledge of Variable Frequency Drives and of the Drive Applications. The intent of this course is to familiarize student with the features of different types of drives, the limitations and how these drives should be applied.

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Types of Variable Speed Drives 2. What is an Variable Frequency Drive 3. Variable Frequency and the A.C. 4. Power Switching Devices 5. Protective Devices & Circuits | <ol style="list-style-type: none"> 6. Application Considerations, Interface Capabilities, Set-up Adjustments 7. Applications associated with HVAC and pumping Industries 8. Programming, Troubleshooting and Preventive Maintenance |
|---|--|

<u>Sept. Class</u>	<u>Feb. Class</u>
Tuesday	Tuesday
6:00-8:00 p.m.	6:00-8:00 p.m.
8 Sessions	8 Sessions
Begins Sep. 13 2011	Begins Feb. 7, 2012
and ends Nov. 1, 2011	and ends March 27, 2012

PLACE:	INSTRUCTOR:
Control Technicians, Inc.	PAUL TUCKER
102 Trade Center Dr.,	Control Technicians, Inc.
St. Peters, MO 63376	

	<u>Advanced</u>	<u>Late</u>
Employees of non-member firms	\$ 290	\$ 340
Employees of Electrical Board member firms	\$ 230	\$ 280

PROGRAMMABLE LOGIC CONTROLLERS & Smart Relays

PDH: 25 (HELD ONLY IN THE FALL)

INFORMATION: This course provides an understanding of Programmable Logic Controllers, their selection and programming. It requires an understanding of hard-wired electrical controls, electrical ladder schematics and the fundamentals of PLC use.

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| <ol style="list-style-type: none"> 1. PLC Fundamentals & Interfacing with the Real World 2. Basic Program Concepts Review 3. Complex Function Instruction Concepts 4. Programming the Controller | <ol style="list-style-type: none"> 5. Documenting the System 6. Application, Start-up Considerations and Maintenance 7. Programming Practice-4 sessions |
|--|--|

<u>Sept. Class</u>	INSTRUCTOR:
Thursday	JOE TAUSER
6:00-8:30 p.m.-10 sessions	Joseph Tauser & Associates, Inc
Begins Sep. 15, 2011	PLACE:
and ends Nov. 17, 2011	Frost, 2429 Schuetz, 63043

	<u>Advanced</u>	<u>Late</u>
Employees of non-member firms	\$ 415	\$ 465
Employees of Electrical Board member firms	\$ 355	\$ 405

GROUNDING

PDH: 10 / PEU: 5

INFORMATION: This course is intended to provide a clearer understanding on the subject of Grounding. The basic physics of grounding will be reviewed and compared to the National Electrical Code. We are recommending this course to electricians, electrical contractors, consulting engineers, utility and industrial maintenance personnel.

1. Definitions; Purposes; Physics; Electrical Systems
2. Grounding Electrical Systems; Main Bonding Jumpers
3. Grounding Electrode Systems; Equipment Grounding Systems; Clearing Ground Faults & Short Circuits
4. Separately Derived Systems
5. Grounding at more than One Building; Ground Fault Protection; Special Locations

TIME AND DATES:

Sept. Class

Thursday
6:00-8:00 p.m.
5 Sessions
Begins Sept. 29, 2011
and ends Oct. 27, 2011

Feb. Class

Thursday
6:00-8:00 p.m.
5 Sessions
Begins Feb. 16, 2012
and ends March 15, 2012

PLACE:

Electrical Board Office
900 S. Highway Dr – Ste. 306
Fenton, MO 63026

Electrical Board Office
900 S. Highway Dr. – Ste. 306
Fenton, MO 63026

INSTRUCTOR: KEITH COOPER, McClure Engineering

COST: Advanced - registrations must be received 2-weeks prior to class start.

	<u>Advanced</u>	<u>Late</u>
Employees of non-member firms	\$ 290	\$ 340
Employees of Electrical Board member firms	\$ 230	\$ 280

Includes study manual, certificate of completion and registration fee of \$75 which is non-refundable

VOICE/DATA COMMUNICATIONS SYSTEMS

PDH: 25 / PEU: 12.5

INFORMATION: This course is designed to provide a practical knowledge of Local Area Network cabling applications. The EIA/TIA Commercial Building Wiring Standards will be explained and simplified, as well as pertinent requirements of the National Electrical Code. The terminology of Networking often obscured by “jargon” will be explained clearly and simply. State of the art cable termination equipment for both copper thru CAT 6a (10GIG) and fiber optics will be demonstrated. Wireless and CCTV will also be discussed.

1. Introduction to UTP cabling / Principles of Transmission / Design Considerations
2. EIA/TIA Standards – Category 5e, 6, and 6a (10GIG)
3. Introduction to Networks and Wireless Networks
4. Coaxial Cable applications / CCTV Changes in the Industry
5. CCTV continued, Live demo of IP based system / Design Considerations
6. Tools and Hardware Needed for the Job / Fire stopping
7. Introduction to Fiber Optics – Theories, Principles and Installation Practices
8. Fiber optic tools and termination equipment - Epoxy Field Polish vs. Pre-Polished Connectors
9. Continuation of Fiber Infrastructure and Terminations / Demo of Fusion Splicing
10. Copper and Fiber Optic Testing and Troubleshooting

TIME AND DATES:

Sept. Class
Monday
6:00-8:30 p.m.
10 Sessions
Begins Sep. 12, 2011
and ends Nov. 14, 2011

Feb.. Class
Monday
6:00-8:30 p.m.
10 Sessions
Begins Feb. 13, 2012
and ends April 16, 2012

PLACE:

Frost
2429 Schuetz
Maryland Heights, MO 63043

INSTRUCTOR:

JOHN MACARTHUR
Frost

COST: Advanced - registrations must be received 2-weeks prior to class start.

	<u>Advanced</u>	<u>Late</u>
Employees of non-member firms	\$ 350	\$ 400
Employees of Electrical Board member firms	\$ 290	\$ 340

Includes study manual, certificate of completion and registration fee of \$75 which is non-refundable

**UNDERSTANDING THE
NATIONAL ELECTRICAL CODE
(Based on 2011 N.E.C.)**

PDH: 60 / PEU: 30

INFORMATION: This detailed course is designed to unlock the mystery, clarify the gray areas, and the how and where to apply the code. This class is based on the 2011 N.E.C. A study manual and workbook with questions are included in class fees.

Please bring your own 2011 Code Book. If you need a 2011 Code Book, add \$75 to the class fees below.

TIME AND DATES:

Sept. Class

Monday - 20 Sessions
6:00-9:00 p.m.

Sept. Class

Wednesday - 20 Sessions
6:00-9:00 p.m.

INSTRUCTOR:

Jerry Feagans - City of St. Louis

INSTRUCTOR:

Marcellus Speight – St. Louis County

Begins Sep. 12, 2011
and ends Feb. 13, 2012
(Class will not be held on
Sept. 19th, Dec 26th and Jan 2nd)

Begins Sep. 14, 2011
and ends Feb. 8, 2012
(Class will not be held on
Nov. 23rd and Dec. 21st)

PLACE:

Electrical Board Office
900 S. Highway Dr- Ste. 306

PLACE:

Electrical Board Office
900 S. Highway Dr. – Ste. 306

COST: Advanced - registrations must be received 2-weeks prior to class start.

	<u>Advanced</u>	<u>Late</u>
Employees of non-member firms	\$ 485	\$ 535
Employees of Electrical Board member firms	\$ 425	\$ 475

Includes study manual, workbook with questions, certificate of completion and registration fee of \$100 which is non-refundable

***** (A 2011 Code book is also required. If you need one, please add \$75 to the above class fees.)**

ENROLLMENT FORM ON PAGE 16

NATIONAL ELECTRICAL CODE CALCULATIONS

PDH: 36 / PEU: 18

INFORMATION: This detailed course is designed to unlock the mystery, clarify the gray areas in performing code calculations. This class is based on the 2011 N.E.C. A study manual with questions is included in class fees.

PRE-REQUISITE: YOU HAVE TAKEN A CODE CLASS IN THE LAST 3 CODE CYCLES (2005 – 2008- 2011). ONLY CODE CLASSES WITH A MINIMUM 24 HOURS OF CLASS TIME WILL BE ACCEPTED. SUBMIT A COPY OF YOUR CERTIFICATE OF COMPLETION ALONG WITH YOUR REGISTRATION FORM.

A 2011 Code Book is required for this class. If you need a 2011 Code Book, add \$75 to the class fees below.

TIME AND DATES:

Feb. Class

Monday

6:00-9:00 p.m.

12 Sessions

Begins Feb. 27, 2012

and ends May 14, 2012

PLACE:

Electrical Board Office

900 S. Highway Dr.-Ste. 306

Fenton, MO 63026

INSTRUCTORS:

JERRY FEAGANS –City of St. Louis

MICHAEL SMITH – Schaeffer Electric

COST: Advanced - registrations must be received 2-weeks prior to class start.

	<u>Advanced</u>	<u>Late</u>
Employees of non-member firms	\$ 380	\$ 430
Employees of Electrical Board member firms	\$ 320	\$ 370

Includes study manual, workbook with questions, certificate of completion and registration fee of \$100 which is non-refundable

***** (A 2011 Code book is also required. If you need one, please add \$75 to the above class fees.)**

PROTECTION OF ELECTRICAL SYSTEMS (Full Day Seminar)

PDH: 8 / PEU: 4

INFORMATION:

Conductors: The installation of cables in wood and metal framing, shallow groves, behind panels that allow access and surface mounted; Installation of cables or conductors in the earth; Explain the effects of chemicals, water, direct sunlight and other conditions; Explain overcurrent protection and short circuit protection; Importance of clearances for feeders and service conductors; Explain why fill ratio is important and affects ampacity of conductors.

Equipment: Sizing equipment for available fault current; how to determine fault current and why it is important; selecting the correct overcurrent devices; importance of signage NFPA 70E commercial not dwellings; the separation of arcing parts from combustible material; explain working clearances; minimizing shock hazards for personnel.

TIME AND DATES:

Dec. Seminar

Wednesday, Dec. 14, 2011
8:00 am - 5:00 pm

PLACE: The Electrical Board
900 S. Highway Dr.-Ste. 306
Fenton, MO 63026

April or May Seminar

CALL EBMI FOR date

INSTRUCTORS:

Jerry Feagans-City of St. Louis
Michael Smith-Schaeffer Electric

COST: Advanced - registrations must be received 2-weeks prior to seminar start. Includes study guide, certificate of completion and registration fee of \$30 which is non-refundable.

	<u>Advanced</u>	<u>Late</u>
Employees of non-member firms	\$ 160	\$ 210
Employees of Electrical Board member firms	\$ 100	\$ 150

Includes study materials, certificate of completion and registration fee of \$30 which is non-refundable

ENROLLMENT FORM ON PAGE 16

TRANSFORMERS

PDH: 4 / PEU: 2 (Half Day Seminar)

INFORMATION: This seminar will provide a basic understanding of transformer operation, calculations, installation, and NEC requirements.

- 1) Transformer selection, application and basic calculations.
- 2) Unit Substation and pad mount transformers.
- 3) Energy efficient and harmonic mitigation transformers.
- 4) Installation and application considerations for Transformers

Oct. Class

October, 2011 (**Call for date**)

8:00 am -12:00 noon

PLACE:

EATON

62 Soccer Park Dr., Fenton, MO 63026

Mar. Class

March, 2012 (**Call for date**)

8:00 am -12:00 noon

INSTRUCTOR:

EATON EMPLOYEES

	<u>Advanced</u>	<u>Late</u>
Employees of non-member firms	\$100	\$ 150
Employees of Electrical Board member firms	\$ 80	\$ 130

READING ELECTRICAL CONSTRUCTION DRAWINGS

(3 evening seminar)

INFORMATION: This course is designed as an introductory level understanding of electrical construction plans and drawings. This group could include but not be limited to Manufacturers Agents, Utility Personnel, Plant Maintenance, Building Design Professionals, Electrical Estimators and anyone else using electrical drawings.

1. Reading Scales; Floor Plans; Site Plans; Elevations; Symbols
2. Electrical Floor Plans; Wiring; One Line Diagrams; Schedules
3. Relaying; Controls; Details; Auxiliary Systems; Specifications

Sept. Class

Thursday, Sept. 8, 15, 22, 2011

6:00 – 8:30 p.m.

PLACE:

Electrical Board Office

900 S. Highway Dr.-Ste. 306, 63026

Jan. Class

Thursday, Jan. 19, 26 & Feb. 2, 2012

6:00 – 8:30 p.m.

INSTRUCTOR:

Craig Hansen

William Tao & Associates

	<u>Advanced</u>	<u>Late</u>
Employees of non-member firms	\$ 220	\$ 270
Employees of Electrical Board member firms	\$ 160	\$ 210

COST: Advanced - registrations must be received 2-weeks prior to class start. Includes study guide, certificate of completion and registration fee of \$50 which is non-refundable.

ELECTRICAL SHOCK & ARC FLASH PROTECTION

PDH: 4 / PDU: 2 (Half Day Seminar)

INFORMATION: In this half day seminar, Ed will discuss Shock Hazard and Arc Flash Analysis (NFPA 70E and IEEE 1584) and how Arc Flash is a serious workplace hazard.

What is arc flash?
Discuss arc flash terminology.
Overview of various codes and standards.
Discuss how an arc flash affects daily work activities.
Compare arc flash evaluation methods.
NFPA Tables & IEEE Calculations.

Hazard Risk Categories.
Mitigation techniques – De-energize;
Energized work permit
How to reduce arc energy; Warning signage; PPE for flash protection.
Shock Hazard Analysis: Safe Work Practices; Exposure voltage; Boundaries; PPE for shock protection;
Energized work permit

Nov. Class

Thursday, Nov. 3, 2011
8:00 -12:00 noon (AM Session)
(PM session offered ONLY if AM session fills up)
1:00 – 5:00 pm (Pm Session)
PLACE: The Electrical Board

April Class

(Tentative) Thursday, April 26, 2012
8:00 – 12:00 noon (AM Session)
INSTRUCTOR:
ED SCHERRY
Scherry Engineering

	<u>Advanced</u>	<u>Late</u>
Employees of non-member firms	\$ 150	\$ 200
Employees of Electrical Board member firms	\$ 90	\$ 140



ARC FLASH CALCULATIONS PROCESS

AND PITFALLS

PDH: 3 / PDU: 1.5

Provide an understanding for design professionals who perform arc flash hazard calculations of the evolution of the analysis for the hazardous condition. A distinction needs to be understood as to how a bus is protected in limiting the arcing incident. The arcing fault current is different than the bolted fault current. Arc flash energy is a result of the arcing current, the time that the arc exists and the distance from the arc, as well as maintenance of equipment. Arc flash hazard is not predictable and the calculations are educated approximations. Investigation of the available arc flash energy needs to be accomplished during design and not after the fact. More stringent design and specification of equipment is required. Will learn: What is involved in performing an Arc Flash Hazard Analysis? Discuss some limitations of arc flash evaluation techniques. Demonstrate how protective device adjustments and distance can assist in reducing the arc flash hazard. What engineering techniques can be used to provide mitigation of an arc flash?

Dec. Seminar

December 9, 2011
8:00 am – 11:00 a.m.
PLACE: The Electrical Board

April or May Seminar

CALL EBMI FOR date
INSTRUCTOR:
ED SCHERRY
Scherry Engineering

	<u>Advanced</u>	<u>Late</u>
Employees of non-member firms	\$ 150	\$ 200
Employees of Electrical Board member firms	\$ 90	\$ 140

COST: Advanced - registrations must be received 2-weeks prior to seminar start. Includes study guide, certificate of completion and registration fee of \$30 which is non-refundable.

OSHA 10 HOUR
Construction Safety & Health Training

Thursday –November 17, 2011 - 4:30 pm – 7:30 pm

Friday –November 18, 2011 - 7:30 am – 3:30 pm

COST: \$125 for employees of Electrical Board firms/\$175 non-members

10 pdh's/4 peu's

**Presented by: Chris Burgoyne-OSHA Authorized Outreach Trainer
At EBMI Office**

This class covers many common hazards in the construction industry. Students will leave the class with a working knowledge of the OSHA Act, selected 29 CFR 1926 subparts, and the organization of regulations. This material has been compiled in an easy to understand format and is taught by an OSHA authorized trainer.



HARSH and HAZARDOUS AREA LOCATIONS

4 pdh's/2 peu's (Half Day Seminar)

Thursday - October 13, 2011

EBMI Office

Thursday – in April 2012 Call for date

900 S. Highway Drive – Ste 306

8:00 am to 12:00 noon

Fenton, MO 63026

Cost: \$80-members/\$130-non-members

Instructor: Kurt Schulz,
Cooper Crouse- Hinds

Topics to be discussed: Importance of Properly Installed Explosion Proof Equipment; components of combustion, NEC classifications of Hazardous Areas; equipment for hazardous areas; seals, 2011 code changes for Articles 500-516.



BUILDING INFORMATION MODELING

(BIM)

4 pdh's / 2 peu's (elective only) (Half Day Seminar)

Wednesday – October, 2011-Call for date

EBMI Office

Wednesday – April 2012 Call for date

900 S. Highway Dr. – Ste 306

8:00 am to 12:00 noon

Fenton, MO 63026

Instructor: Ken Schriver, Ross & Baruzzini
Cost: \$80-members/\$130-non-mbrs Demonstrator: Nate Hass. Ross & Baruzzini

Topics to be discussed: What is BIM, What is Revit, Revit Pros and Cons, How can Revit help your business, things to consider before diving into BIM.

**Call the Electrical Board office (636-305-6434)
for more information or the spring dates for
these seminars.**

REGISTRATION FORM

(PLEASE PRINT)

SEPTEMBER - DECEMBER 2011 JANUARY – MAY 2012

Advanced registrations must be received 2-weeks prior to first night to receive advanced rates! (This form can be faxed to The Electrical Board office to qualify.)

<u>CLASS NAME</u>	<u>REGISTRANT'S NAME</u>	<u>Advanced</u>	<u>Late</u>
_____	_____	\$ _____	\$ _____
_____	_____	\$ _____	\$ _____

CODE Class Participants ONLY: In addition, I need 2011 Code book @\$75.

WE ACCEPT



A STUDENT SHOULD UNDERSTAND THESE COURSES DO NOT ADDRESS WIRING SKILLS AND PROFICIENCIES, AND THAT THE ELECTRICAL BOARD, ITS OFFICERS AND INSTRUCTORS ARE NOT RESPONSIBLE FOR ANY LIABILITY ARISING FROM ANY USE OR APPLICATION OF THE KNOWLEDGE GAINED FROM THESE COURSES.

Students attending over 80% of classes and completing recommended course work will receive a certificate at the end of class. Students needing PEU's, please see Page 3 – Section 7. However, for reimbursement, many companies require other information. If so, please check below.

Do you need attendance record? Yes No

Do you need Grade? Yes No

Do you need PEU's for Jefferson County? Yes No

Signature _____

Authorized by (Please print) _____

Company _____

Address _____

City/State/Zip _____

Work Phone: _____ and/or Cell#: _____

Fax _____ e-mail _____

(Please make copies of this form for multiple enrollments)

TO REGISTER

PHONE (636) 305-6434

MAIL The Electrical Board

FAX (636) 305-6430

900 S. Highway Dr.-Ste. 306

E-MAIL bill@electricalboard.org

Fenton, MO 63026

SEVERAL HALF-DAY PROGRAMS....

CO-SPONSORED WITH AMEREN

For more information regarding these programs (since the committees may be still finalizing some of the topics), please call EBMI office, 636/305-6434 and give them your email or mailing information. We will be happy to forward more information to you when it becomes available.

ADVANCED RESERVATIONS ARE REQUIRED!

COST: \$25 IF SENT 10 DAYS PRIOR TO SEMINAR DATE; \$40 AFTER THIS TIME

RENEWABLE ENERGY SUMMIT

August 4, 2011 – 7:45 a.m. – 12:00 noon

Ameren Auditorium, 1901 Chouteau, 63103

**Will also do short tour of Ameren's Solar Learning Center during breaks

4 pdh's

ELECTRICAL SAFETY SYMPOSIUM

TUESDAY – OCTOBER 18, 2011

7:45 a.m. – 12:00 noon

Courtyard by Marriott

COLUMBIA, MO

THURSDAY – OCTOBER 20, 2011

7:45 a.m. – 12:00 noon

Ameren Auditorium

1901 Chouteau, 63103

4 pdh's/2 peu's

ENERGY EFFICIENCY WORKSHOP

January 24, 2012 (tentative date)

7:45 a.m. – 12:00 noon

Ameren Auditorium, 1901 Chouteau, 63103

4 pdh's



SMART GRID FORUM

April 24, 2012 (tentative date)

7:45 a.m. – 12:00 noon

Ameren Auditorium, 1901 Chouteau, 63103

4 pdh's