**Imlah** ***Electrical Consulting*** 3-28-2023

**Electrical Continuing Education, 4-Hr. Code Related**

**“Transformers Course Outline”**

**Instructor James Imlah**

**Course Syllabus:**

This 4-hour power point presentation will be based on the latest adopted NEC (National Electrical Code©). This presentation will provide close examination of electrical overcurrent protection requirements and specific code references for transformer installations. Topics will cover parallel conductors, conductor sizing and ratings that will include some in class calculations. Presentation will include grounding, bonding, disconnecting means, overcurrent protection and ampacity correction factors. There will be an in-depth discussion about main bonding jumpers, supply side bonding jumpers, grounded conductors, grounding electrode conductors and bonding conductors with sizing calculations.

**Course content, Objectives and time spent:**

* Definitions & Guarding requirements, .25 Hour
* Grounding & Bonding requirements, 1.5 Hour
* Marking requirements & Accessibility requirements, .25 Hour
* Coffee Break, 15 minutes
* Maximum primary and secondary overcurrent protection requirements,1 Hour
* Calculating ampacity based on kVA ratings and calculated continuous and non-continuous loads .75 hour

**Course Outcomes:**

Help the attendee to understand the effects of loads, environmental conditions, and temperature considerations for transformers. To discuss and clarify the intent of transformer grounding, bonding, overcurrent protection, other environmental special conditions that can affect conductor installation. Able to calculate the sizing of conductors for primary & second loading with grounding and bonding.

 **The course will cover pats of the following NEC Chapters and Articles:**

Chapter 2 Articles 215, 220, 240, and 250

Chapter 3 Article 310

Chapter 4 Article 450

Chapter 9 Tables 4, 5 and 8

**Course Attendees**

This course would be primarily for any Utah licensed electricians. Other persons such as engineers, electrical apprentice or other interested parties.

**Course Documentation**

* Upon competition of the training, 4 hours of CR (Code Related) CEU's will be submitted to the within 7 working days.
* A sign-in roster will be maintained for 5-years and made available upon request
* Course survey forms will be given to attendees and will be maintained for 5-years and made available upon request.
* Certificates of Completion will be emailed or presented at onsite training sessions