

February 25 – 27, 2019

The Florida Hotel & Conference Center | Orlando, Florida

1500 Sand Lake Road, Orlando, Florida 32809

1-800-588-4656

TE- 17 | February 27 | 8:00 AM - 5:00 PM | 1-Day (8 hours)

Course Title: AC Measurements and Measurement Parasites Particular to AC Calibrating Torque Instruments

Instructor: Mark Evans, Guildline Instruments

Course Description: This 8 Hour hands-on course covering AC current measurements including sources, shunts, Current Transformers (CTs) and associated measurement setups. The focus will be on measuring AC currents and resistance shunts using currents from 20 mA to 100 A, and with frequencies from 20 Hz to 100 kHz. A deep analysis will be provided into the variables that affect test setups, measurement results and uncertainties. Special attention will be paid to design elements that make up a good AC current shunt and a good AC current source; and the impact of wiring and grounding. As well material contributions to uncertainty such as phase, power and temperature coefficients, drift of standards (with linear regression), EMI and AC noise, and frequency affects will be examined. Addressing these contributions in an uncertainty analysis will be provided. Equipment to be used for the hands-on training includes current sources such as a calibrator and transconductance amplifier, different types of AC current shunts, and associated AC Current connectors and cabling. Participants will be able to use different setups with hands-on practice. Involvement in this workshop will provide understanding of best practices, associated measurement techniques, and tangible demonstrations of measurements using AC currents up to 100 kHz. Measurement parasites that affect AC current measurements will also be covered as well as Safety considerations. Measurement uncertainties will be reviewed and outlined in a real-world, practical uncertainty budget.

Instructor Biography: With 20 years of experience, Mark Evans is a Senior Designer who leads the development and is credited on the associated patents of many of Guildline's new and flagship products, including those related to AC current measurements. He is highly recognized world-wide within the Metrology community for his knowledge and skills. His responsibilities cover both software development and electrical design. Having authored and presented several papers and courses pertaining to best measurement practices in the field of electrical and temperature metrology, Mark is well established as a professional trainer, solution provider and system integrator. He is often called upon to give training in primary and National Laboratories around the world as well as presentations and workshops on many different aspects of metrology at international conferences and seminars.