Measurement Uncertainty Made Easy

Why is it important to express the uncertainty in measurement? Quite simply, there is no traceability in measurement if every link in the traceability chain does not have an uncertainty statement. For this and other reasons, ISO/IEC 17025 requires calibration laboratories, in particular, to provide estimates of uncertainty of their measurements using accepted practices.

The instructor will discuss the basics for preparing uncertainty estimates for typical uncomplicated measurement processes. The instructor's approach is consistent with the GUM but it dispenses, wherever possible, with the algebraic notations, statistical jargon, arithmetic modeling, and differential calculus operations found in the GUM.

For a simple measurement process, it will be shown that the mathematics is quite straightforward and that the actual challenge, if any, in estimating the measurement uncertainty is in defining the factors that affect the measurement; namely, in understanding the metrology.

Participants will receive an example Excel spreadsheet for making uncertainty calculations.

The tutorial will include group exercises. Participants should bring stationary and pocket calculators and/or laptop computers.

The course will be in English. However, the instructor, Mike Ouellette, will respond to any questions in French and the documentation for the course will be available in English and in French.