

1014-L1-1087      **Mary R. Parker\*** (mparker@austincc.edu), 1622 Waterston, Austin, TX 78703, and **Hunter Ellinger** (hunter@ellinger.org). *Mathematics for Measurement — “Math for Practical Arts”*.

This one-semester course resembles the usual “math for liberal arts” course in not requiring college-level prerequisites and in not being intended as part of a sequence, but differs by its selection of topics to support a theme of measurement and by its agenda of showing the utility of mathematics in expressing practical knowledge and in aiding communication by artisans with engineers. The course is a collaboration between a math/statistics teacher and a person experienced in industrial measurement processes, who together have written the learning materials now used.

Topics include functional modeling, practical trigonometry, noise description, error sensitivity and propagation, and calibration. Students learn to use Excel spreadsheets in extensive numerical, formulaic, and graphical investigations; they also learn to use the direct and inverse trig functions of scientific calculators. Linear functions are visited from multiple perspectives, including local slope of nonlinear functions and calibration for measurement bias/scale errors. A mix of graphical, numerical, and algebraic representations and methods are used, including examples of each approach which enable solution of problems that are more difficult with the other methods. (Received September 27, 2005)