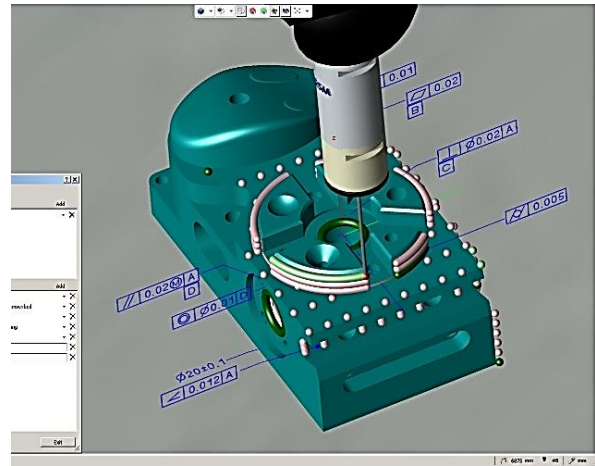


Educational Seminar #215: Dimensional Measurement with CMMs, Vision and Form Instruments

This 2-day classroom course is designed for anyone using advanced dimensional measuring systems, such as coordinate measuring machines (CMMs), vision systems, roundness testers, and surface finish measuring instruments. This course is not a Mitutoyo software training course, but is designed to complement the product training offered by Mitutoyo or anyone else. The goal of this course is for the student to develop deeper knowledge of how these advanced measuring systems operate, including hardware and software, to enable the student to maximize the potential of their measuring equipment. The course will focus on best measurement practices for the complicated dimensions and tolerances typically measured on these systems, include geometric dimensioning and tolerancing (GD&T) from ASME



Y14.5 and ISO 1101. This course will cover topics such as CMM sampling strategies (number and location of points), proper use of datums and how to build coordinate systems, probe and tip calibration, software vs GD&T, system accuracy, filtering and cutoffs, and other critical topics that must be understood by anybody implementing this kind of measuring equipment. This course will focus heavily on the measurement of GD&T with CMMs, and therefore familiarity with GD&T is necessary for a successful educational experience. This course will also teach GD&T from a measurement perspective and will provide opportunities for the student to reinforce their GD&T knowledge. This course combines theory with practice and is taught in a hands on, experiential, manner. This course is taught in the Metrology Training Lab at Mitutoyo America, which is full of various measuring equipment that will be used by the students.



Prerequisites: To be successful in this course, students must have prior experience on some type of CMM and must have basic understanding of GD&T. Prior experience with vision or form equipment is useful, but optional. Students with no prior CMM experience, or who have not attended the CMM software training provided by their CMM manufacturer, should not attend this course.

Pricing:

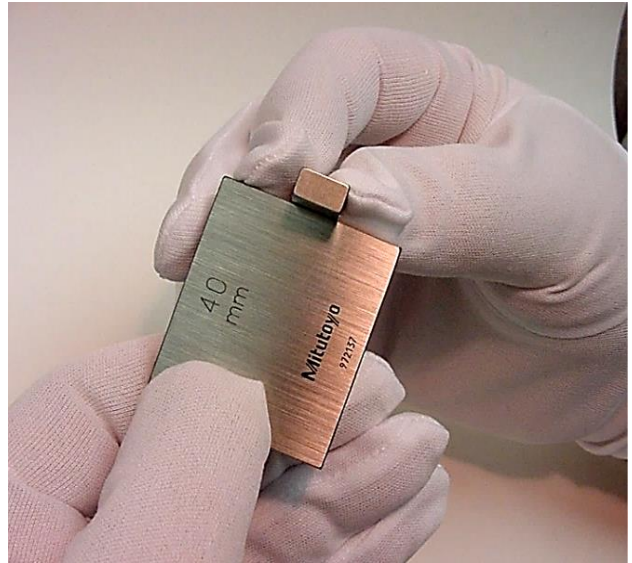
Course	No. of Days	Advanced Price	Standard Price
Seminar 215: Dimensional measurement with CMMs, Vision and Form instruments	2	\$ 990	\$ 1095

- Advanced pricing applies when registration is completed more than 2 weeks prior to the class starting.
- A discount of 10% is available when registering more than two students for the same course.
- For cancellation information, please visit our website at www.mitutoyo.com/education.

Registration: For questions or registration, please contact the Mitutoyo America Education Department at 888-MITUTOYO (option 6) or direct at 630-723-3620. Office hours are 8:30 am to 5:00 pm Central Time. We can also be reached via email at mim@mitutoyo.com. Purchase orders can be faxed to 630-978-6471.

Dimensional Metrology Curriculum

Dimensional metrology – the science and practice of dimensional measurement – is one of the fundamental educational series of the Mitutoyo Institute of Metrology. The full curriculum consists of free online educational material and videos plus a series of independent classroom courses that cover all aspects of dimensional measurement and inspection, from calipers to gage blocks to coordinate measuring machines. Students can choose which courses are most relevant and create their own unique educational experience. Our modern dimensional metrology curriculum is for anyone wanting to learn about dimensional measuring equipment and strategies for implementation, including selection, application, calibration, and care of dimensional measuring systems. Principles and practice are taught with a hands-on experiential learning approach to engage the students and promote retention of the concepts.



Four independent classroom courses are currently available in our Dimensional Metrology series:

- **Seminar 101: Dimensional Measurement with Precision Measuring Equipment**
- **Seminar 111: Introduction to Dimensional Gage Calibration**
- **Seminar 215: Dimensional Measurement with CMMs, Vision, and Form Instruments**
- **Seminar 216: Dimensional Metrology Quality**

Many students may wish to take all four courses in sequence and therefore we try to provide a schedule that makes that possible. Seminars 101 and 111 are frequently offered together in a 3-day sequence. Similarly, seminars 215 ‘Dimensional Measurement with CMMs, Vision and Form Instruments’ and 216 Dimensional Metrology for the Quality Professional’ are frequently offered together.

Students looking for a more in-depth dimensional calibration course are encouraged to explore our 3-day [Seminar #114 Dimensional Gage Calibration](#), which is only available at the Metrology Training Lab at the headquarters of Mitutoyo America in Aurora, Illinois.



Comprehensive Curriculum: The Mitutoyo Institute of Metrology offers a number of courses to meet the educational needs of manufacturing, quality, and measurement professionals. Our course are scheduled regularly throughout the year.



Mitutoyo and the Mitutoyo Institute of Metrology is a worldwide organization. We are proud to state that more than 200,000 engineers, technicians and managers have attended our measurement seminars over the years. If you wish to register or if you have additional questions, please contact us at 630-723-3620, 888-MITUTOYO, or email mim@mitutoyo.com. Please visit our website for cancellation information at www.mitutoyo.com/education