



Uncertainty Training FAQs

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Integrated Sciences Group answers frequently asked questions about our measurement uncertainty analysis training. The answers are intended to provide further clarification about our 3-day and 5-day courses and our open-enrollment and on-site training options. If you have any questions or comments regarding any of the FAQ topics listed below or would like us to answer additional questions, please contact us at training@isgmax.com.

Question

What is the difference between your 3-day and 5-day uncertainty analysis courses?

Answer

Both courses cover key uncertainty analysis concepts and methods and include quizzes and hands-on examples to maximize subject matter comprehension and retention. The 5-day course provides more in-depth coverage of multivariate uncertainty analysis and includes the analysis of multi-modular measurement systems. Additional quizzes and analysis examples are included in the 5-day course.

Our 5-day Measurement Uncertainty Analysis course provides the most comprehensive presentation of the principles, methods and procedures for analyzing direct and multivariate measurements and measurement systems. A fully registered copy of UncertaintyAnalyzer is provided for this course.

Our 3-day Introduction to Uncertainty Analysis course covers a subset of topics and includes a fully registered copy of Uncertainty Sidekick Pro. This course is primarily designed for calibration laboratory personnel responsible for implementing uncertainty analysis methods and procedures for laboratory accreditation and ISO 17025 compliance.

Why can't you teach uncertainty analysis in a day or two?

The length of an uncertainty analysis course depends on the course objectives. If the objective is to provide a very rudimentary presentation of concepts and methods, along with a few simplified analysis examples, then one or two days may be sufficient.

However, our objective is to enable attendees to fully understand concepts and to apply uncertainty analysis methods in the workplace. Therefore, more time is needed for student quizzes and hands-on analysis examples.

Since our courses include the use of comprehensive analysis software, some time is also required to explore



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Question

How does your uncertainty analysis training compare to courses offered by other companies or organizations?

Is software really needed to teach uncertainty analysis?

Which training is best suited for calibration laboratory accreditation?

Answer

software features and functions.

The various courses offered by other companies or organizations primarily focus on very basic concepts and methods and present one or two simplified analysis examples. Often, attendees take our uncertainty analysis courses after other courses have failed to present a cogent understanding of the topic and have not provided the skills needed to conduct real-world uncertainty analyses.

In contrast, our courses impart an in-depth understanding of concepts, methods and procedures and provide attendees with the skills needed to implement them in the workplace.

This is due, in part, because our course materials have been developed by two established experts with the requisite academic credentials and industry experience. These experts are also the course instructors, so students are taught by highly qualified people with the breadth of knowledge and experience not found elsewhere.

Yes. Important uncertainty analysis concepts, methods and procedures are reinforced through hands-on use of our Uncertainty Sidekick Pro or UncertaintyAnalyzer software. The use of our software also makes it possible to analyze real-world examples that are relevant to the attendee's workplace.

In this regard, we provide additional course time to review attendee problems and develop on-the-spot uncertainty analyses where we are able to review measurement procedures, highlight the data/information needed, and clarify the interpretation and application of equipment specifications. This further reinforces important concepts and methods and provides additional guidance in using the analysis software.

This depends on the scope of accreditation. Our 3-day Introduction to Uncertainty Analysis course and the application of Uncertainty Sidekick Pro is sufficient for developing capability statements for many measurement areas/parameters.

Our 5-day Measurement Uncertainty Analysis course and the application of UncertaintyAnalyzer may be more



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Question

Answer

Have your uncertainty analysis courses been approved by laboratory accreditation organizations?

No. Contrary to what others may claim, accreditation organizations are not chartered to endorse any particular measurement uncertainty course.

Accreditation to ISO 17025 requires that measurement uncertainties are estimated using the methods found in the *ISO Guide to the Expression of Uncertainty in Measurement* (GUM). Our uncertainty analysis courses provide in-depth training in using these methods, along with supporting methods that have been developed since the publication of the GUM.

Is it necessary to take your training if I purchase your Uncertainty Sidekick Pro or UncertaintyAnalyzer software?

No. Each application includes a complete User Manual, extensive on-screen Help and free technical support for the licensed user. We have thousands of domestic and international clients and a large portion of them have not needed formal training to use our software to conduct their uncertainty analyses.

Major benefits of taking our training include: 1) gaining a comprehensive understanding of important concepts and methods, 2) a fully registered copy of Uncertainty Sidekick Pro or UncertaintyAnalyzer and 3) practice in the use of the software to demonstrate and clarify key features and capabilities.

What are the benefits of my company scheduling on-site training?

The principal benefits are twofold. First, on-site training can be tailored to the specific measurement disciplines and uncertainty analysis issues that are important to your company or organization. Second, on-site training can significantly reduce the travel time and expenses for your employees, especially if you are interested in training several people.

How does your web-based training differ from your selected-site uncertainty analysis courses?

There are no differences in the subject matter, materials provided or duration of either training option. The main advantage of web-based training is that no attendee travel time or expense is required.



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Question

Why should I take uncertainty analysis training from ISG?

Answer

A good part of the answer to this question can be found for the FAQ “How does your uncertainty analysis training compare to courses offered by other companies or organizations?”

Our instructors have authored numerous measurement uncertainty analysis articles and papers and are the principle authors of NCSLI Recommended Practice RP-12-2010 *Determining and Reporting Measurement Uncertainty* and NASA MQA Handbook Annex 3 – *Measurement Uncertainty Analysis Principles and Methods*, both to be published in 2010.

In addition to receiving the prestigious NCSLI Education and Training award, our instructors have extensive experience developing uncertainty analyses for a wide variety of scientific and engineering disciplines, equipment calibration scenarios and testing processes.

Consequently, the topics and material covered in our courses are designed to advocate and perpetuate methods and practices that are demonstrably suitable for analyzing real-world measurement processes.

Can you provide referrals from people who have taken your courses?

Referrals are available on request. Contact ISG at 661-872-1683 or training@isgmax.com.