



OHTA

Occupational
Hygiene Training
Association

OHTA501 MEASUREMENT OF HAZARDOUS SUBSTANCES Course Description



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OHTA501-MEASUREMENT OF HAZARDOUS SUBSTANCES

Risk assessment, a central part of occupational hygiene, is the art and science of anticipation, recognition, evaluation and control of workplace hazards. Risk assessment allows occupational hygienists to evaluate whether controls are needed or if existing controls need improvement. The aim of this course is to provide students with a sound understanding of the techniques for assessing exposure to hazardous substances in the workplace and an understanding of how exposure information can be used to assess risk.

What techniques for assessing exposure to hazardous substances are discussed in the course manual?

The course manual provides a comprehensive discussion of workplace sampling strategies and types of surveys with consideration of who, when, where to sample, method selection, and sampling duration. Details are provided on agency-approved air sampling methods and equipment used to collect particulates such as dusts, mists, fumes, and fibers or gases and vapors. Other topics include sample analysis and data interpretation with a detailed review of occupational exposure limits in various countries. Non-sampling approaches to risk assessment are presented including control banding and exposure modeling. The manual also contains details on bulk, surface, and skin sampling and includes a section on confined space monitoring. A chapter on biological monitoring is also presented with an introduction to physiology and toxicology presented in the Appendix.

On successful completion of the OHTA501 module, the student will be able to:

- Describe the general approach to occupational chemical health risk assessment, including the role of air sampling and non-sampling approaches
- Select appropriate equipment to measure specific airborne contaminants and devise a suitable sampling strategy
- Choose a suitable air sampling pump and perform pump flow rate verification
- Understand the basics of laboratory sample analysis equipment
- Calculate an 8-hour Time-Weighted-Average (TWA) and compare results to occupational exposure limits
- Present the results in a form useful for health risk assessment purposes enabling management to comply with relevant legislation and best practices.
- Understand uses for other sampling tools and techniques for bulk, surface, dermal sampling, and confined space monitoring.

Course Design

- Delivered as a 5-day on-line or classroom training program
- On-line student examination with multiple choice questions
- Translation of the exam into the native language of students may be available
- Student manuals are available for free download in English and other languages at [OHTA501 – Measurement of Hazardous Substances – Occupational Hygiene Training Association](#).
- Materials supplied to trainers include extensive slides, suggestions for Questions and Answers for class discussion, practical exercises, and case studies.
- Loaner equipment may be available at no charge from SKC, an OHTA sponsor, with submission of the designated request form. Email SKCorder@skcinc.com

Become a Trainer

Training providers for the OHTA501 may include national IH/OH associations, IH/OH organizations and companies such as professional consultancies. Training providers must have an OHTA Training Director with an IH/OH certification recognized by the National Accreditation Recognition (NAR) Committee of the International Occupational Hygiene Association (IOHA) such as CIH, ROH, COH, etc. Individual trainers working under the Training Director for the OHTA501 do not have to be certified but should be knowledgeable in the course content. Trainers set their course fees in local currency and keep those fees. The only fees paid to OHTA are for the mandatory on-line exam which is £100 (about 130-135 USD) per student.

Additional Study Options

The OHTA501 course can be the first step to more training in the core aspects of OH leading to the ICertOHTA qualification. If you are pursuing a career in OH, see the list of OHTA courses and the qualification framework at <https://ohtatraining.org/students/framework/>

For more information, please contact the OHTA Secretariat team@ohtatraining.org

Testimonials

Have a look at what OHS Professionals are saying about the OHTA501 Course:

"The OHTA 501 course on measurement of hazardous substances provides a comprehensive treatment of the subject of occupational exposure assessment. I am impressed by the breadth of coverage from exposure limits selection, managing extended or novel shifts, dealing with chemical mixtures, sampling statistics, methods selection, calibration, and analytical chemistry. The course includes some very useful links to tools for the practicing hygienist and links to background information for those who want to take a deeper dive into the topic. The inclusion of an Appendix with the introduction to physiology and toxicology is a complementary bonus. This OHTA course is a nice one-stop-shop of information for the practicing occupational hygienist as well as for those in training."

Frank Hearl, P.E. (United States)

Retired from NIOSH after 48 years of service, Fellow of the Society for Risk Analysis.

"I have been part of a team of trainers conducting the OHTA501 course for many years. Most recently, I had the opportunity to conduct the course in Vietnam for occupational hygiene and safety professionals from various industries. The participants found the course highly relevant and practical. In particular, the hands-on sessions enabled them to apply the knowledge directly to their workplace needs. OHTA continues to support learning without boundaries, bringing quality occupational hygiene education to professionals around the world. I strongly recommend the OHTA501 course to those who wish to build a solid foundation in exposure assessment and contribute effectively to healthier and safer work environments."

Dr. Keng Been Ang (Singapore)

Ph.D. in Environmental Engineering, Managing Director and Board Director of SKC Asia

"The OHTA501 course delivers immense value by perfectly bridging occupational hygiene theory with essential, practical application. My students in the Philippines responded with overwhelming enthusiasm, deeply appreciating the hands-on learning and practical curriculum. The course equips participants with the immediate confidence and skills needed to tackle real-world workplace hazards. Ultimately, OHTA501 remains a world-class foundation for anyone looking to advance their career in occupational safety."

Dr. Tse Chun Kuen Alex (Hong Kong SAR)

DEng, FCMI, FIIRSM, CIH, CMIOSH, MArborA, RSO

Institute of Ergonomics and Hygiene Limited

Testimonials

Have a look at what OHS Professionals are saying about the OHTA501 Course:

"For OHS professionals working across a range of workplaces where adverse exposures may arise, the newly updated OHTA501 Measurement of Hazardous Substances manual delivers an in-depth review of risk management, exposure monitoring, and the professional judgement necessary to safeguard worker health. As an OHS practitioner for over 50 years, I believe the OHTA501 course content will be very useful for those that are beginning their career or considering a career in OHS with an interest in planning, measurement, and interpretation of sampling data."

Donald M. Weekes (Canada)

MA, CIH, CSP with 50 years' OEHS experience in manufacturing, public schools, and residential buildings.