OHTA Occupational Hygiene Training Association

OHTA502 THERMAL ENVIRONMENT

Course Description

@ohtatraining

Occupational Hygiene Training Association (OHTA)

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https://ohtatraining.org

OHTA502 - THERMAL ENVIRONMENT

Humans are homeothermic which means they possess an efficient regulatory system that maintains their internal body temperature within a narrow range of 37°C. This is necessary for normal cellular function and survival. Failure to maintain internal body temperature can result in serious health risks under extreme thermal conditions or high metabolic demand. To maintain the internal body temperature of workers within acceptable limits, occupational hygienists must be aware of and manage as much as possible critical factors that can lead to adverse health effects and accidents.

The OHTA502 course manual on the Thermal Environment was updated in 2023 to include the latest developments in the science of thermal stress along with strategies to evaluate and control hot and cold work environments. Also included in the updated course are risk assessment approaches from Australia and South Africa along with Thermal Stress Threshold Limit Values (TLVs®) from the American Conference of Governmental Industrial Hygienists (ACGIH).

Students will learn...

- How to identify sources of thermal stress within the work environment
- The effects of the thermal environment on the body
- How to conduct thermal surveys using various instrumentation
- How to assess the risk from exposure to thermal stress using various indices and published guidelines
- Appropriate control approaches for hot and cold work environments

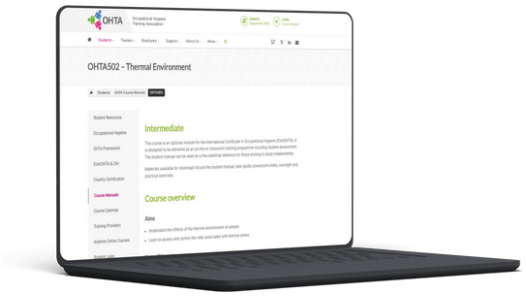
Course Design

- 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 Spanish here: https://ohtatraining.org/students/fmanuals/manuals/ohta502/
- Materials supplied to trainers include extensive slides, suggestions for Questions and Answers for class discussion, practicums, and case studies

Additional Study Options

The OHTA502 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/

Course Content



Science of Thermal Stress

- Thermal Spectrum, Physiological Response to Thermal Stress, Heat Production and Exchange with Surroundings, Health Effects

Evaluation of Hot Environments

- The use of Heat Stress Indices, Direct Physiological Measurements, Effective and Corrected Effective Temperature Index, Wet Bulb Globe Temperature (WBGT), Thermal Work Limit (TML) and other heat stress indices

Control of Hot Environments

- Environmental Controls, Administrative Controls, Personal Protective Clothing and Equipment, Hot Surfaces

Evaluation of Cold Environments

- Wind Chill Index and Equivalent Chilling Temperature, Clothing Insultation Index, Cold Stress Indices

Control of Cold Environments

- Personal factors, Engineering Controls, Management Controls, Clothing

Risk Assessment Approaches

- Australian Institute of Occupational Hygienists (AIOH) Tiered Approach, South Africa Code of Practice, ACGIH Thermal Stress TLVs®, Quantitative vs Qualitative Approaches, Physiological Assessments

Next Steps

To find an in-person course in your area or an on-line course suitable for your time zone and language, see the Course Calendar at https://ohtatraining.org/students/courses/

If you are a certified occupational/industrial hygienist with a certification recognized by the IOHA National Accreditation Recognition Committee (NAR) and would like to become an OHTA Approved Trainer for any of our courses, apply here: https://ohtatraining.org/trainers/apply/. Note that trainers set the course fees in local currency and keep the fees. The only fees paid to OHTA are for the mandatory exam for each student of $125USD/£100.

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

Testimonials

Have a look at what OHS Professionals are saying about the OHTA502 Thermal Environment Course:

"NEXAM Pty. Ltd. consulting company has taught the OHTA502 course for many years for a variety of delegates with varied professional experience from many different parts of the world. The course content remains highly relevant across a variety of climates and industries. It is particularly valuable to workers with climates such as that in the South African area, where extreme temperatures and varied working environments make managing heat stress a daily concern. Feedback has been excellent with students noting that the course strengthens their confidence and capability in managing thermal risks effectively."

Naadiya Mundy (South Africa)
Registered Occupational Hygienist by Southern African Institute for Occupational Hygiene (SAIOH), Past-President SAIOH
Managing Director for Nexam Pty Ltd.

"The OHTA502 course provides a comprehensive understanding of managing thermal stress and strain in different work environments. Heat stressors vary widely across regions and seasons. But in my experience teaching the OHTA502 course, I have witnessed the knowledge students have gained on how to use various approaches for managing thermal risks in diverse contexts. The OHTA502 content is practical and well-structured, and the students consistently appreciate the clarity, relevance, and real-world applicability of the lessons."

Zephan Chan Yu Yun (Singapore)
Registered Industrial Hygienist
Director Institute of Ergonomics and Hygiene, Deputy President National Safety Council of Singapore, Adjunct Senior Lecturer the University of Newcastle

"The OHTA502 Thermal Environment course is a fantastic and comprehensive exploration of one of the most complex occupational hazards. Thermal stress is the hazard that, more than any other, requires EHS professionals to consider multiple perspectives simultaneously: the workplace environment; the physiological response of the human body; engineering and risk-mitigation strategies; and ethical considerations. The OHTA502 addresses all these issues and includes less common, but highly valuable content on the relationship between heat stress and economic loss. The section on human physiology is exceptionally detailed yet presented in a very clear and accessible manner. The material on monitoring methodologies provides a thoughtful blend of historic techniques and innovative practices. Finally, I particularly appreciated the section on approaches to risk assessment, as it offers a practical and operational framework for addressing heat stress challenges in real workplace settings."

Emmanuel Cauda (Italy, USA)
Doctorate from Politecnico di Torino in Italy
Extensive work history as a Researcher in the field of Occupational Health and Safety including U.S. NIOSH. Adjunct Professor at the University of Pittsburgh School of Public Health in Pennsylvania.

Testimonials

Have a look at what OHS Professionals are saying about the OHTA502 Thermal Environment Course:

"The OHTA502 Thermal Environment course manual contains important key information on both heat and cold stress, conveniently found in one place, making it a valuable resource for students. It widely covers various aspects of the thermal environment from physiological responses to and effects of both hot/cold environments along with how to conduct surveys for exposure assessment. One unique feature of the manual is its coverage on thermal comfort, which is not often found in thermal stress resources, but is a significant aspect, particularly in non-industrial workplaces."

Jo Anne G. Balanay (USA)
MOH, PhD, CIH
Professor at the Environmental Health Sciences Program at East Carolina University

"The OHTA502 training module supports professionals who need to understand the recognition, assessment, and control of thermal stress in hot and cold working environments. OHTA502 provides students with a solid understanding of the body's physiological response to the thermal environment, how to measure the work environment (heat and cold stress), how to assess worker response (heat and cold strain), criteria to which environmental measurements and physiological monitoring can be compared, along with practical ways to control the hazards."

Julie Hanebuth (USA)
CIH, CSP, MPH
Argonne National Lab