



# Monitoring for Health Hazards at Work



## Why study this module?

The health, welfare and productivity of workers are affected by the environmental conditions in their workplaces and has become a major concern for society and is therefore considered to be an integral part of an organisation's activity and contributes to the quality of the product or service delivered.

## Module content

The Monitoring for Health Hazards at Work module aims to provide you with information to develop an appreciation of how to recognise, measure and control different health hazards, which are present in work places. The health and safety discipline concerned with recognition, evaluation and control of hazards in the work place is known as Occupational Hygiene. We can summarise typical work place health hazards under the broad groupings; biological, physical, chemical and psychosocial. Health hazards are generated directly or indirectly by work processes. Some health hazards for example noise, have been around for centuries, while other new hazards have been introduced with new technologies e.g. biopharmaceuticals. As the work place evolves and new work processes and practices are introduced, new hazards emerge, and later, depending on worker exposures scenarios, some of these new hazards contribute to new occupational diseases.

## Learning outcomes

On completion of this module you will be able to:

- Discriminate between different kinds of health hazards at work
- Recommend how exposure to hazards can be controlled
- Carry out a risk assessment of work health hazards

## Who is the target audience?

Engineering, Quality, Technical support, Health and Safety professionals working in specialist manufacturing industries.

## Module facts

Course level: Level 9

Module credit: 5 ECTS. Gain transcript or use towards PG Cert/PG Dip/MSc qualification in Biomedical Science

Duration: Over one semester

Entry Requirements: Please refer to the application section of the programme brochure

Fees: €1,000

Applying: [www.nuigalway.ie/apply](http://www.nuigalway.ie/apply)

Closing date: 2 – 8 weeks prior to module start date

## Module topics

### Introduction including

- Historic Development of the Profession, Principles of Occupational Hygiene, Basic Principles of Risk Assessment, Legal Requirements

### Thermal Environment

- The Human Thermal Environment, Metabolic Heat Production, Thermal comfort survey, Thermal Indices, Heat Stress, Controlling the Climate of the Built Environment, Controlling Hot Environments, Controlling Cold Environments

### Workplace Sampling Strategies

- Designing a Sampling Strategy for an Occupational Hygiene Survey, Static or Area Monitoring, Whose Exposure to Measure?
- What Hazard to Measure?, Recording Exposure Monitoring Data

### Workplace Aerosols

- Basic Aerosol Definitions, Aerosol Size and Types, Aerosol Transportation Processes, Health-Related Aerosol Fractions, Sampling for Workplace Aerosols – Filtration, Sampling of Workplace Aerosols – Direct Reading Instruments

### Gases & Vapours

- Physical Properties of Gases and Vapours, Selection of Measurement Methods for Gases & Vapours, Long and short-term Samplers

### Work Place Noise

- Introduction & Objectives, Basic Acoustics, Sound pressure, Sound Intensity, Sound Power, Weighing, Frequency analysis, Human Response to Sound, & Health Effects, Noise Regulation, Measurement of Sound, Noise Measurement Instruments, Control of Work Place Noise

### Workplace Vibration

- Basic Physical Properties of Vibration, Human Response to Vibration, and Health Effects, Vibration White Finger, Whole Body Vibration, Vibration Regulations, Measurement of Vibration, Reducing & Controlling Vibration Exposures

### Biological Hazards

- Biological Agents, Routes of Entry of Biological Agents to the Human Body, Biohazard Classification System, Health Effects of Exposure, Monitoring Techniques for Measurement of Biological Agents, Health and Safety Legislation Specific to Work with Biological Agents, Biological Risk Assessment, Controlling Exposure to Biological Agents in the Work Place

### Preventing & Controlling Work Place Contaminants

- Hierarchy of Control for Workplace Hazards, Prevention & Control of Exposure to Hazardous Chemical Agents, Elimination at the Source, Substitution, Optimisation of Plant, Process, Systems and Methods of Work, Segregation/ Enclosure, Ventilation, Air cleaning devices, Fans, Equipment Monitoring and Maintenances, Personal Protection Equipment (PPE)

## Student testimonial



### Patricia Keary McDermott

#### Position held:

Senior Clinical Engineering Technician.  
Portiuncula Hospital, HSE West.

“The Monitoring for Health Hazards at Work module is extremely well laid out, there are nine units leaving the student in no doubt what is required of them. Each unit comprises an Introduction, Objectives, “the detail of each unit” followed by review and questions. There is no “waffle”! All subject material is relevant, high interest and to the point. Therefore there is no time wasted. This is particularly relevant, I feel for distance learning students. The module provides an insight to Occupational Exposure Limit Values and Code of practice for the Safety, Health and Welfare at Work Regulations (Chemical Agents), which are relevant in so many work environments, regardless of the industry or services provided. As safety is everyone’s responsibility I would recommend this module no matter what your role in the workplace.”



## Module Director

### Dr. Marie Coggins

The module is delivered by Dr. Marie Coggins, who graduated from IT, Sligo with a BSc in Environmental Science and Technology (1995) and obtained an MSc from the Department of Biology and Biochemistry, Queens University Belfast (1996) followed by a PhD from the School of Physics NUI Galway (2000). She was also awarded a certificate of operational competence in occupational hygiene (LFOH) from the British

Occupational Hygiene Society. In the past, she worked as an occupational hygienist for Eli Lilly S.A. Pharmaceutical. Currently Marie is lecturing in Occupational Hygiene and Chemical safety at NUI Galway. Specific research interests include measurement of environmental and occupational hazards.

## Contact details:

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