



**ADVANCED DIPLOMA OF
MECHANICAL ENGINEERING TECHNOLOGY**

MODULE DETAILS

Module 21: Management of Hazardous Areas

Nominal duration: 3 weeks (36 hours total time commitment)

This time commitment includes the preparation reading, attendance at each webinar (1 hour plus 15-30 minutes for discussion), and the time necessary to complete the assignments and further study.

MODULE PURPOSE

This module provides an understanding of the hazards involved in using electrical equipment in potentially explosive atmospheres. It is based on the international IEC79 series of standards that are now replacing the older national standards. Explosion-proof installations can be expensive to design, install and operate. The wider approaches described in these standards can significantly reduce costs whilst maintaining plant safety. The associated terminology and its correct use are explained throughout the module. It will cover area classification, selection of explosion protected electrical apparatus as well as describing how protection is achieved and maintained in line with these international requirements.

**PRE-REQUISITE
MODULES/UNIT(S)**

NONE

ASSESSMENT STRATEGY

To evaluate the achievement of the learning outcomes; written assignments, group projects and practical exercises are set.

**SUMMARY OF LEARNING
OUTCOMES**

1. Examine and discuss the background to hazardous area management
2. Describe area classification and protection concepts
3. Examine and discuss standards, certification, selection and installation of equipment

Learning Outcome 1

Examine and discuss the background to hazardous area management

Assessment criteria

- 1.1 Define hazardous areas
- 1.2 Discuss the properties of gases in general
- 1.3 Examine and discuss flammable gases, flammable vapors and ignition sources
- 1.4 Discuss the general protection requirements for hazardous areas



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Learning Outcome 2	Describe area classification and protection concepts
Assessment criteria	<ul style="list-style-type: none">2.1 Describe the ratings and classifications applicable to hazardous areas2.2 Explain the principles of explosion protection2.3 Explain the various protection (Ex) concepts
Learning Outcome 3	Examine and discuss standards, certification, selection and installation of equipment
Assessment criteria	<ul style="list-style-type: none">3.1 Identify the authorities responsible for certification3.2 Describe the marking and identification of equipment3.3 Describe the process of apparatus/system certification3.4 Explain the concept of Descriptive Systems Documentation3.5 Outline the applicable codes of practice3.6 Demonstrate awareness of National standards3.7 Discuss hazardous area installation requirements in terms of hardware

Delivery Mode

A combination of asynchronous and synchronous e-learning delivery comprising a judicious mix of interactive online web conferencing, simulation (virtual labs) software, remote online labs, online videos, PowerPoint slides, notes, reading and study materials (in PDF, HTML and Word format) accessed through the Moodle Learning Management System (LMS).