

ADVANCED DIPLOMA OF PLANT ENGINEERING

MODULE DETAILS	<p>Module 11: Heating, Ventilation and Air Conditioning</p> <p>Nominal duration: 4 weeks (32 hours total time commitment)</p> <p>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.</p>
MODULE PURPOSE	<p>This module is designed for engineers and technicians from a wide range of abilities and backgrounds and provides an introduction to the fundamentals of Heating, Ventilation and Air Conditioning. It commences with a review of psychrometric charts and then examines the factors that influence design choices, indoor air quality, load calculations and heating/ventilation and air conditioning systems.</p>
PRE-REQUISITE MODULE(S)	<p>Module 10: Process Plant Layout and Piping Design</p>
ASSESSMENT STRATEGY / CONDITIONS OF ASSESSMENT	<p>To evaluate the achievement of the learning outcomes; written assignments, group projects and practical exercises are set. The Training and Assessment Matrix (TAM) documents the assessment criteria included in these assessments, based on the learning outcomes. The Training and Assessment Strategy (TAS) documents the overall training strategy for this Advanced Diploma course. The conditions of assessment are outlined in the Assessment Guidelines, TAM and TAS. Written assignments, group projects and practical exercises are required to meet assessment criteria outlined in the Assessment Guidelines, TAM and TAS.</p>
SUMMARY OF LEARNING OUTCOMES	<ol style="list-style-type: none"> 1. Examine and discuss the fundamentals of HVAC and Psychrometric charts 2. Consider design constraints and perform cooling load calculations 3. Discuss the attributes of Indoor Air Quality 4. Examine and discuss HVAC system types, design and

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	operation	
Learning Outcome 1	Examine and discuss the fundamentals of HVAC and Psychrometric charts	
Assessment Criteria	1.1	Examine and discuss basic concepts in HVAC
	1.2	Interpret and utilize a psychrometric chart
Learning Outcome 2	Consider design constraints and perform cooling load calculations	
Assessment Criteria	2.1	Consider indoor and outdoor issues
	2.2	Perform cooling load calculations
Learning Outcome 3	Discuss the attributes of Indoor Air Quality	
Assessment Criteria	3.1	Discuss central air conditioning systems
	3.2	Define IAQ
	3.3	Examine the effects of IAQW on occupants
	3.4	Outline basic investigation techniques
	3.5	Discuss architectural, engineering and interior design choices for good IAQ
Learning Outcome 4	Examine and discuss HVAC system types, design and operation	
Assessment Criteria	4.1	Examine and discuss HVAC design and operation
	4.2	Describe HVAVC types
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).		