DPEEM2612: Energy Management for Industrial Plants

MODULE DETAILS		**Energy Management for Industrial Plants DPEEM2612** Nominal duration in hours: 36 This time commitment includes the structured activities, preparation reading, and attendance at each webinar, completing exercises, practical assessments, and proctored assessments. It is also expected that students spend additional time on readings, personal study, independent research, and learning, practicing on remote labs and required software and working on any projects and assignments. This module covers the principles of plant energy management, the optimization of energy, as well as energy audit and data analysis.	
MODULE PURPOSE		The purpose of this module is for participants to develop fundamental knowledge of energy conservation and management principles for optimum energy utilisation in industrial process plants.	
MODIFICATION HISTORY		Rev 4.0	
PREREQUISITE AND/OR CO-REQUISITE MODULES		N/A	
SUMMARY OF LEARNING OUTCOMES		1. Outline plant energy management auditing and analysis processes 2. Determine strategies for optimising energy efficiency in plant operations 3. Outline principles for the application of renewable energy and energy sustainability in industrial plants	
LEARNING OUTCOMES		**ASSESSMENT CRITERIA**	
Learning outcomes specify what students will be able to do as a result of the learning.		Assessment criteria provide the criteria by which achievement of the learning outcomes will be judged.	
1	Outline plant energy management auditing and analysis processes	1.1	Outline the fundamentals of plant energy management
		1.2	Describe processes for monitoring and controlling usage with energy audits
		1.3	Interpret data collected from energy audits
2	Determine strategies for optimising energy efficiency in plant operations	2.1	Explain energy efficiency strategies and technologies appliable to industrial plants
		2.2	Define outcomes for the attainment of optimised energy use in industrial plant systems
		2.3	Recommend strategies to optimise energy use in an industrial plant based upon audit data
		2.4	Outline techniques for monitoring energy consumption and energy data analytics
3.	Outline principles for the application of renewable energy and energy sustainability in industrial plants	3.1	Outline potential sources and applications of renewable energy in industry
		3.2	Assess the feasibility of integrating renewable energy into existing plant systems

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		3.3	Explain practical and organisational considerations for meeting energy sustainability goals in industrial plants
DELIVERY MODE		Online and/or face-to-face	
SPECIALISED RESOURCES		N/A	
ASSESSMENT STRATEGY		**METHODS OF ASSESSMENT** Assessors must gather a range of evidence that is valid, sufficient, current, and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, structured assessments, samples, and questioning. This will include short answer questions on the knowledge content, the use of remote and virtual labs, and writing tasks to apply the learning to academic tasks. **CONDITIONS OF ASSESSMENT** **Assessor Requirements:** Assessors must satisfy the assessor requirements in the standards for registered training organisations (RTOs) current at the time of assessment. Assessors must also hold a tertiary qualification in engineering or related field. The RTO must also ensure that assessors are able to demonstrate how they keep their industry knowledge up to date through ongoing professional development. The RTO must take appropriate steps, as an ongoing procedure, to verify information about each assessor's qualifications, vocational competencies, and current industry skills. **Assessment Conditions:** Questioning techniques should not require language, literacy, and numeracy skills beyond those required in this module. The candidate must have access to all tools, equipment, materials, and documentation required.	

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	The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals, and reference materials. Assessments may be open book assessment and may be completed off campus. Invigilation software will be used for some assessments to ensure authenticity of work completed. Model answers and marking guide must be provided for all knowledge-based assessments to ensure reliability of assessment judgements when marking is undertaken by different assessors.