DPENA2609: Noise and Vibration

MODULE DETAILS		**Noise and Vibration DPENA2609** 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 fundamental attributes of noise and vibration, vibration monitoring and analysis, troubleshooting of mechanical system faults, and failure diagnosis.	
MODULE PURPOSE		The purpose of this module is for participants to develop an overview of the knowledge required to identify and assess failures in mechanical systems related to noise and vibration.	
MODIFICATION HISTORY		Rev 4	
PREREQUISITE MODULES		Heating, Ventilation and Air Conditioning DPEHV2608	
SUMMARY OF LEARNING OUTCOMES		1. Outline fundamental attributes of noise and vibration 2. Describe the techniques for vibration monitoring and analysis 3. Describe approaches to troubleshooting mechanical system faults and diagnosing failures	
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 fundamental attributes of noise and vibration	1.1	Explain fundamental principles of acoustics
		1.2	Explain fundamental principles of vibration
		1.3	Outline fundamental attributes of human response to sound and vibration
		1.4	Describe essential features of noise and vibration control
2	Describe the techniques for vibration monitoring and analysis	2.1	Discuss vibration analysis as a predictive maintenance tool
		2.2	Describe fault detection and diagnosis using vibration analysis
		2.3	Outline vibration monitoring and analysis techniques
3	Describe approaches to troubleshooting mechanical system faults and diagnosing failures	3.1	Outline typical operational faults of mechanical equipment
		3.2	Describe fault indicators their applications
		3.3	Explain techniques for diagnosing failures in mechanical equipment
		3.4	Outline mechanical troubleshooting techniques
DELIVERY MODE		Online and/or face-to-face	
SPECIALISED RESOURCES		N/A	
ASSESSMENT STRATEGY		**METHODS OF ASSESSMENT**	

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	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. 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.

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	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.