



UNIVERSITI TEKNOLOGI MARA

EVT679: NOISE, HEAT AND VIBRATION

Course Name (English)	NOISE, HEAT AND VIBRATION APPROVED
Course Code	EVT679
MQF Credit	3
Course Description	no description provided
Transferable Skills	Communication Skills, Teamwork Skills, Organization Skills
Teaching Methodologies	Lectures, Discussion, Presentation
CLO	CLO1 Describe noise, vibration and heat problems conceptually CLO2 Assess the results of noise, vibration and heat measurements or calculations CLO3 Analyze noise, vibration and head to determine the need for control measures
Pre-Requisite Courses	No course recommendations
Topics	
1. Noise as a pollutant factor of the living and working environment. 1.1) 1.1 Sources of the noise 1.2) 1.2 Basic concepts and quantities. 1.3) 1.3 OSHA noise control requirements 1.4) 1.4 Occupational noise exposure	
2. Sound field and its energy 2.1) 2.1 Analysis of acoustic signals. 2.2) 2.2 frequency analysis of sound.	
3. Sound propagation in free space and closed area 3.1) 3.1 Sound power. 3.2) 3.2 Directional emission.	
4. Noise reduction and control 4.1) 4.1 Sound Source Modification 4.2) 4.2 Control of the Transmission Path 4.3) 4.3 Modification of the Receiver 4.4) 4.4 Existing Facilities 4.5) 4.5 Facilities in the Design Stage 4.6) 4.6 Airborne versus Structure-borne Noise	
5. Vibrations. 5.1) 5.1 Basic concepts and quantities of vibrations.	
6. Measurement of vibrations 6.1) 6.1 Sensors and instruments. 6.2) 6.2 Diagnostics and monitoring of machines in operation.	
7. Measurement of the impact of the vibration on a human. 7.1) 7.1 Primary syndrome 7.2) 7.2 Segmental or hand-arm vibration 7.3) 7.3 General or whole-body vibration	
8. Methods for reducing vibrations. 8.1) 8.1 Vibration Perception Thresholds 8.2) 8.2 Modeling of Whole-body Vibration 8.3) 8.3 Vehicle Design 8.4) 8.4 Active Vibration Control	

9. The Thermal Environment

- 9.1) 9.1 The Thermal Spectrum
- 9.2) 9.2 Principles
- 9.3) 9.3 Effects of Temperature Extremes
- 9.4) 9.4 Thermal Comfort
- 9.5) 9.5 Evaluation of Hot Environments

10. Evaluation and Control of Thermal Environment

- 10.1) 10.1 Evaluation of Hot Environments
- 10.2) 10.2 Control of Hot Environments
- 10.3) 10.3 Thermal Surveys
- 10.4) 10.4 Evaluation of Cold Environments
- 10.5) 10.5 Control of Cold Environments

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	n/a	20%	CLO2
	Presentation	n/a	10%	CLO3
	Test	n/a	30%	CLO1

Reading List	Recommended Text	<ul style="list-style-type: none"> Fahy, F. and Thompson, D. 2016, <i>Fundamentals of sound and vibration</i>, CRC Press [ISBN: 978-1-4822] Parsons, K.C 2014, <i>Human Thermal Environments: The Effects of Hot, Moderate, and Cold Environments on Human Health, Comfort, and Performance</i> Taylor and Francis.
	Reference Book Resources	<ul style="list-style-type: none"> Crocker, M.J. 2007, <i>Handbook of noise and vibration control</i>. Wiley, Wiley
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	