



UNIVERSITI TEKNOLOGI MARA

AAR654: BUILDING SERVICES II

Course Name (English)	BUILDING SERVICES II APPROVED
Course Code	AAR654
MQF Credit	2
Course Description	A study of vertical and horizontal transportation systems, fire protection, mechanical ventilation and air conditioning systems. Emphasis will be on the principles and choices of system for different types and scale of buildings.
Transferable Skills	Expert in Field Resourceful and Responsible
Teaching Methodologies	Lectures, Seminar/Colloquium, Field Trip, Case Study
CLO	CLO1 Demonstrate the principles and application of building services in building design. CLO2 Explain the application methods and usage of building services related to different type and scale of buildings.
Pre-Requisite Courses	No course recommendations
Topics	
1. Mechanical Transportation 1.1) Principles, criteria and design requirement 1.2) Types available and criteria for selection	
2. Fire Protection 2.1) Aims classification on fire types 2.2) Purpose group	
3. Passive Fire Fighting 3.1) Site planning, compartment, exit route 3.2) Structural requirements - construction, details and materials used 3.3) Special study	
4. Active Fire Fighting 4.1) Alarm and detection systems 4.2) Suppression system 4.3) Local By-Laws and regulation	
5. Mechanical Ventilation 5.1) Basic principles of mechanical ventilation 5.2) Supply and extract systems and different types of fans	
6. Air-conditioning systems. 6.1) Principles of air conditioning, air/water system, 6.2) Types of air-conditioning systems 6.3) Spaces required for air-conditioning system, ducting, AHU etc.	

Assessment Breakdown	%
Continuous Assessment	40.00%
Final Assessment	60.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Assessment on the application methods and usage of building services related to different type and scale of buildings through selected case studies.	40%	CLO2

Reading List	Reference Book Resources	<ul style="list-style-type: none"> • Rigby, B. 2005, <i>Building Services Handbook: Incorporating Current Building & Construction Regulations</i>, Butterworth-Heinemann • Knight, J & Jones W.P. 2004, <i>Building Services Pocket Book</i>, 2nd Edition Ed., Elsevier Ltd Oxford Burlington • Chadderton, D.V. 1993, <i>Air Conditioning A Practical Introduction</i>, E. & F.N. Spon London • Norbert, L. 2001, <i>Heating, Cooling, Lighting: Design Methods for Architects</i>, John Wiley & Sons, Inc USA • Stollard, P., and Johnstan, L. 1993, <i>Design Against Fire: Understand the basic principles and application of mechanical ventilation and the cooling for human comfort in buildings</i>, E & F.N., Spon London • Awbi, H.B. 1991, <i>Ventilation of Buildings</i>, E & F.N., Spon London • Chadderton, D. 1991, <i>Building Services Engineering</i>, E & F.N., Spon London • Stollard, P. 1991, <i>Fire From First Principles</i>, E & F.N., Spon London • Hall, F. 1989, <i>Building Services & Equipment</i>, Vol 1,2,3 and 4 Ed., Longman Essex
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	