UNIVERSITI TEKNOLOGI MARA

BCM614: CONSTRUCTION TECHNOLOGY V

Course Name (English)	CONSTRUCTION TECHNOLOGY V APPROVED
Course Code	BCM614
MQF Credit	4
Course Description	The general aim of the course is to provide sufficient knowledge and understanding of other works related to building construction. The course covers the element of industrialized building systems, building deterioration, building maintenance, structural concrete failures and repair, refurbishment and demolition with emphasis on the technology and installation of the element.
Transferable Skills	Technical and management skills Leadership skills
Teaching Methodologies	Lectures, Blended Learning, Field Trip
CLO	CLO1 Assess key issues associated with the design principles, and construction of Industrialised Building System, building maintenance and refurbishment CLO2 Analyse the causes and strategy involved of post construction phases CLO3 Explain findings and ideas on the causes and strategy involved in post construction phases through appropriate technology devices CLO4 Demonstrate universal good and positive values in completing given task.
Pre-Requisite Courses	No course recommendations

Topics
1. Industrialised Building System (IBS) 1.1) Introduction 1.2) Benefits 1.3) Classifications and characteristics of IBS 1.4) Comparison between industrialized and non-industrialized. 1.5) Types of IBS: Precast concrete framing, steel formwork --systems, steel framing systems, prefabricated timber framing systems and blockwork systems. 1.6) Manufacture and assembly of component 1.7) Optimisation of resources 1.8) Buildability Concept 1.9) IBS Score 1.10) Jointing Systems 1.11) Modular coordination
2. Building Deterioration 2.1) Introduction 2.2) Factors affecting deterioration of building materials and component: compatibility, durability, weathering, strength, dimensional stability, porosity, capillarity, moisture and thermal movement. 2.3) Agent of degradation and decay 2.4) Selection and treatment of materials and components 2.5) Investigation procedures 2.6) Building mycology – management of decay and health in building
3. Building Maintenance 3.1) Introduction 3.2) Types of maintenance 3.3) Maintenance strategies 3.4) Maintenance policy 3.5) Condition survey 3.6) Maintenance manuals

4. Structural Failures and Repairs 4.1) Introduction 4.2) Types of structural failures: cracking, deterioration of hardened cement paste, corrosion of embedded steel etc. 4.3) Inspection, diagnosis & testing of concrete structures 4.4) Repair methods
5. Building Refurbishment 5.1) Introduction 5.2) Types of building refurbishments 5.3) Method of building refurbishments
6. Demolition 6.1) Introduction 6.2) Planning of demolition: survey, statutory notices, supervision and safety 6.3) Methods of demolition: Hand demolition, pusher arm demolition, deliberate collapse demolition, demolition ball technique, wire rope pulling demolition, demolition by explosives etc

Assessment Breakdown	%
Continuous Assessment	40.00%
Final Assessment	60.00%

Details of Continuous Assessment

Assessment Type	Assessment Description	% of Total Mark	CLO
Attendance	Observation	5%	CLO4
Case Study	Building maintenance,deterioration and refurbishment	15%	CLO3
Group Project	IBS project types and calculation	20%	CLO2

Reading List

Recommended Text

- **Bryan, T. 2010, *Construction Technology : Analysis and Choice*, Blackwell Publishing**
- **Chudley, R & Greeno, R 2008, *Building Construction Handbook, Butterworth Heinemann Publication*, 7th Edition Ed.**
- **Illingworth J.R 2000, *Construction Methods and Planning*, E & FN Spon**
- **Nunnally S 1998, *Construction Method and Management*, Prentice-Hall**
- **Meryam Qays 2015, *Industrialized Building System : Malaysian Approach*, Filspay Academy [ISBN: 97813292428]**

Reference Book Resources

- **Chudley, R & Greeno, R 2008, *Advanced Construction Technology, Pearson Education Limited.*, 7th Edition Ed.**
- **Barrie Chanter and Peter Swallow 2007, *Building maintenance management*, 2nd Ed., Wiley Interscience [ISBN: 978047069201]**

Article/Paper List

This Course does not have any article/paper resources

Other References

- **n/a CIDB*IBS DIgest*, CIDB, Malaysia**