UNIVERSITI TEKNOLOGI MARA

BCT454-2: BUILDING CONSTRUCTION TECHNOLOGY

Course Name (English)	BUILDING CONSTRUCTION TECHNOLOGY APPROVED
Course Code	BCT454-2
MQF Credit	4
Course Description	The general aim of the course is to provide a basic knowledge and understanding on the different types of superstructure framing system for building. The course also covers a continuous understanding on types and methods of construction of building elements and finishes as well as theoretical study on related external and civil works involve in building construction.
Transferable Skills	1. Ability to appply the basic theories of superstructure works in construction project which emphasize the attribute of 'knowledge' in MQF1 LOD1. 2. Ability to prepare written case study report and present findings related to substructure works, which emphasise on the 'communication' in MQF5 LOD5. 3. Ability to reproduce construction drawings of superstrucutre , which emphasise on the 'prcatical skill' in MQF2 LOD2.
Teaching Methodologies	Lectures, Lab Work, Studio, Field Trip, Tutorial
CLO	CLO1 Apply the basic theories of superstructure works in the construction project. CLO2 Report verbally and in writing the construction methods of superstructure in the construction project. CLO3 Reproduce construction drawings of superstructure in the construction project.
Pre-Requisite Courses	No course recommendations

Topics
1. Reinforced Concrete Framed Structures 1.1) Materials used 1.2) Concrete mixes and strength 1.3) Reinforcement 1.4) Formwork 1.5) RC Column. Beam & Floor construction 1.6) Pre-stressed concrete beam
2. Steel Framed Structures 2.1) Steel product & properties 2.2) Structural members 2.3) Steel Connections 2.4) Type of framing system (truss, portal & space frame)and Erection 2.5) Protection against fire and corrosion
3. Timber Framed Structures 3.1) Types of timber building system 3.2) Timber Framed Wall 3.3) Traditional Malay House 3.4) Prefabricated Timber 3.5) Timber Staircase
4. Walls Systems 4.1) Drywall 4.2) Timber, 4.3) Glass Cladding 4.4) Infill Panel 4.5) Curtain Wall

5. Staircase 5.1) Types of Staircase 5.2) Materials used 5.3) Staircase Layouts 5.4) Methods of construction for concrete, timber & steel staircase
6. Doors & Windows 6.1) Introduction to types, framing and lining of doors and windows 6.2) Doors: Flush doors, paneled, ironmongery, construction methods 6.3) Windows: Casement, louvered, ironmongery, glazing, construction methods
7. Ceiling 7.1) Introduction 7.2) Types of Ceiling 7.3) Fixed ceiling 7.4) Suspended ceiling, 7.5) Construction methods
8. Roof Structures and Finishes 8.1) Types of Roofs 8.2) Roof Trusses 8.3) Roof Finishes 8.4) Waterproofing System 8.5) Roof Insulation 8.6) Construction Methods
9. Finishes 9.1) Introduction 9.2) Floor Finishes 9.3) Wall Finishes
10. External Works 10.1) Roadworks 10.2) Drainage & Sewerage 10.3) Fencing and gates/ grill 10.4) Turfing & Landscape

Assessment Breakdown	%
Continuous Assessment	50.00%
Final Assessment	50.00%

Details of Continuous Assessment

Assessment Type	Assessment Description	% of Total Mark	CLO
Assignment	Group assignment - report writing on selected topic	10%	CLO2
Individual Project	Produce construction drawing of the common superstructure works	20%	CLO3
Practical	Observation on drawing skill	10%	CLO3
Presentation	Presentation on finding of Assignment 1	10%	CLO2

Reading List

Reference Book Resources

- **American Institute of Steel Construction 2014, *Steel Construction Manual*, 15th Edition Ed., Springer [ISBN: 9781564240071]**
- **Francis D. K. Ching 2014, *Building Construction Illustrated*, 5th Edition Ed., John Wiley & Sons [ISBN: 9781118458341]**
- **Francis D. K. Ching 2014, *Building Structures Illustrated*, 2nd Edition Ed., John Wiley & Sons [ISBN: 9781118458358]**
- **Edward Allen,Joseph Iano 2013, *Fundamentals of Building Construction*, John Wiley & Sons [ISBN: 9781118138915]**
- **R. Chudley, R. Greeno 2016, *Building Construction Handbook*, 11th Edition Ed., Routledge [ISBN: 9781138408807]**
- **Roger Greeno 2017, *Principles of Construction*, Routledge [ISBN: 9781138408814]**
- **Robert L. Peurifoy,Clifford J. Schexnayder,Robert Schmitt,Aviad Shapira 2018, *Construction Planning, Equipment, and Methods, Ninth Edition*, McGraw-Hill Education [ISBN: 9781260108804]**
- **Kim S. Elliott,Colin Jolly 2014, *Multi-Storey Precast Concrete Framed Structures*, Wiley-Blackwell [ISBN: 9781405106146]**
- **Emmit, S. 2018, *Barry's Advanced Construction of Buildings*, 4th Edition Ed., Wiley-Blackwell [ISBN: 9781118977101]**
- **Malcolm Millais 2017, *Building Structures*, 3rd Edition Ed., Routledge [ISBN: 9781138119758]**
- **Robert L. Peurifoy,Clifford J. Schexnayder,Robert Schmitt,Aviad Shapira 2018, *Construction Planning, Equipment, and Methods, Ninth Edition*, McGraw-Hill Education [ISBN: 9781260108804]**
- **Newman, A. 2014, *Metal Building Systems: Design and Specifications*, 3rd Edition Ed., McGraw-Hill Education [ISBN: 9780071828963]**

Article/Paper List: This Course does not have any article/paper resources

Other References: This Course does not have any other resources