



UNIVERSITI TEKNOLOGI MARA

BCT663: BUILDING INFORMATION MODELLING

Course Name (English)	BUILDING INFORMATION MODELLING APPROVED
Course Code	BCT663
MQF Credit	3
Course Description	An introduction to the concepts and processes that related to the use of computer based information rich 3D models of building to support design process. Students are introduced to the techniques of BIM (Building Information Modeling) using standard software. A weekly lecture covers the theoretical materials, supported by a 3 hours lab class where hands-on techniques are taught. Assessments are based on building modeling exercise, with the production of a range outputs from the model.
Transferable Skills	Handling and mastering a BIM Software for building design and construction.
Teaching Methodologies	Lectures, Studio
CLO	CLO1 Explain the concept of Building Information Modelling (BIM) in Construction Industry CLO2 Display the skills with relevant BIM Software in the Construction Industry CLO3 Demonstrate the information retrieval and management related to Building Information Modelling (BIM)
Pre-Requisite Courses	No course recommendations
Topics	
1. Introduction to Building Information Modeling 1.1) • Definition and Important of BIM 1.2) • Benefits of BIM 1.3) • BIM Concepts and Terminologies 1.4) • BIM Modeling Requirement and Methods 1.5) • BIM Software Tools 1.6) • BIM Interoperability 1.7) • BIM Application Area	
2. BIM for Design Coordination and Documentation 2.1) • Introduction 2.2) • BIM use in Conceptual Design and Visualization 2.3) • BIM use in Design Development and Submission 2.4) • Design Stage Quantity Take-off and Estimation 2.5) • Hands-on BIM Lab Sessions	
3. BIM for Design Analysis 3.1) • BIM for Constructability Assessment 3.2) • BIM Structural Analysis 3.3) • BIM for Building Performance Analysis 3.4) • BIM for Energy and Sustainability Analysis 3.5) • Hands-on BIM Lab Sessions	
4. BIM for Construction Planning and Coordination 4.1) • Introduction 4.2) • BIM use in Pre-casting and Prefabrication 4.3) • BIM-based Construction Project Scheduling (4D) 4.4) • BIM-based Quantity Take-off (5D) 4.5) • BIM for Construction Visualization and Coordination 4.6) • Hands-on BIM Lab Sessions	

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Assignment 1 - Individual Project & Presentation	20%	CLO2
	Assignment	Assignment 2 - Group Project & Presentation	30%	CLO2
	Final Test	Online Test on Concept of BIM	10%	CLO1
	Group Project	BIM Group Project & Presentation	40%	CLO3

Reading List	Reference Book Resources
	<ul style="list-style-type: none"> • Eastman, Chuck, Teicholz, Paul, Sacks, Rafael, Liston, & Kathleen 2008, <i>BIM Handbook: A Guide to Building Information Modeling for Owners, Managers, Designers</i>, Wiley • Brad, H 2009, <i>BIM and Construction Management: Proven Tools, Methods and Workflows</i>, Sybex • Willem, K 2008, <i>Building Information Modeling: Planning and Managing Construction Projects with 4D CAD and Simulations</i>, McGraw-Hill Professional • Eddy, K. & Brad, N 2008, <i>Green BIM: Successful Sustainable Design with Building Information Modeling</i>, Sybex • Dana, K., S., & Michael, T 2009, <i>Building Information Modeling: A Strategic Implementation Guide for Architects, Engineers, Constructors, and Real Estate Asset Managers</i>, Wiley • Robert, S., W 2011, <i>BIM Content Development: Standards, Strategies, and Best Practices</i>, Wiley
Article/Paper List	This Course does not have any article/paper resources
Other References	This Course does not have any other resources