

## **Module Synopses**

### **Certificate in BIM Management (Fundamentals, Deployment & Coordinations Strategies)**

#### **1. BIM Fundamentals**

This module aims at providing trainees with BIM Fundamentals knowledge, where BIM concepts and basics will be introduced. Lectures will be conducted to facilitate learning. The module will provide background knowledge on the work processes pertaining to modelling development during project phases. Elaboration on the types of BIM Model will be introduced and their purposes in which they are modelled for coordination and collaboration activities will also be explained. Trainees will also be introduced to the type of BIM software and tools available in the market.

#### **2. BIM Standards & Implementation Strategies**

This module aims at providing trainees with in-depth knowledge on BIM deployment within an organisation, where trainees will be taught how to implement BIM Strategies and setup of necessary standards operating procedures and guidelines when adopting BIM in an organisation. Lectures will be conducted to facilitate learning. The module will thus aim to introduce trainees with Singapore BIM Guide, Submission Guideline and Essential Guides to facilitate setting up of standards. Trainees will also be introduced to BIM Risk Management where they will learn about BIM legal issues and BIM Particular Conditions.

#### **3. BIM for Design Coordination & Documentation**

This module aims at providing trainees with the work processes involved during Design Coordination. Trainees will be introduced firstly to the challenges faced during Design Processes when using BIM. Both Lectures and Lab practices will be conducted to facilitate learning. Secondly, topics on Design Documentation on creating model and drawing content for submission and documentation will also be taught. Next, the module will also provide trainees with skillsets on how to use BIM for Design Visualisation and how to conduct Spatial Coordination amongst different disciplines' models. Subsequently, trainees will also be introduced to BIM Disciplinary Strategies for Model Integration, where they will learn how to prepare the models for Sharing and Coordination purposes and identify the strict protocols when preparing model content for Documentation. Trainees will also be introduced to Work-sharing methodology and BIM Objects modelling. Finally, the last two topics will provide trainees on knowledge pertaining to BIM used for Project Periodic Reviews, Tendering and Quantity Take Off purposes, where trainees will learn how to ensure model consistency between different disciplines during Reviews and how to prepare model for scheduling and costing.

### **Certificate in BIM Management (QA, QS & Construction Coordination)**

#### **4. BIM for Quality Assurance Checking, Design & Quantity Surveying Analysis**

This module aims at providing trainees with the knowledge on BIM protocols involving Quality Assurance/ Model Checking during coordination work with different disciplines at design and

construction phases. Both Lectures and Lab practices will be conducted to facilitate learning. Trainees will be introduced to the types of Quality Assurance Checks involved during Coordination activities and the types of Quality Assurance Software available in the industry. Trainees will also be introduced to topics on a typical Quality Checking process. Further to Quality Assurance Checking, trainees will learn how to use BIM for Quantity Surveying work, such as Quantity Taking Off. Apart from these, trainees will also learn how to use BIM for Structural Analysis and Energy Analysis.

#### **5. BIM for Construction Planning & Coordination**

This module aims at providing trainees with the knowledge on using BIM for construction projects. Both Lectures and Lab practices will be conducted to facilitate learning. Trainees will first be introduced to the concepts of Construction Planning and Coordination. Secondly, trainees will also be introduced to BIM application areas in construction projects. Thirdly, trainees will learn how use 4D BIM for construction management, where they will be trained with software skillsets. The module also aims to teach trainees on how to use 5D BIM for cost estimation, where there will be hands-on opportunities.

#### **6. BIM Project**

This module aims to assess trainees' abilities to apply BIM knowledge and skills learnt from Modules: **BIM Fundamentals, BIM Standards and Implementation Strategies, BIM for Design Coordination & Documentation, BIM for Construction Planning and Coordination & BIM for Quality Assurance Checking & Design Analysis**. Trainees will need to collaborate in the context of different disciplines coordinating and managing a building project using BIM. Trainees would be required to propose a Project on BIM modelling and applications, in which they will be assessed based on individual and group effort. The BIM project will need to encompass applications pertaining but not exhaustive to the following:

- BIM modelling
- Site Analysis
- E-submission
- Visualisation
- Clash Detection
- 4D scheduling
- 5D estimation
- Sustainability