

Topic Synopsis

1. Certificate in Essential Skills to Enhance Employability

This certificate covers essential communication areas which include emotional intelligence (EQ), digital marketing and essential job search skills. It introduces key concepts in the areas of data and visual analytics using Power BI, statistics and cyber security. It introduces key concepts in the areas of data and visual analytics using Power BI, statistics and cyber security.

Topic 1: Emotional Intelligence (EQ) for Career Decision Making

This 2 days' workshop is an enhanced training in which participants will acquire job-seeking related skills, capabilities and the ability to expand employment opportunities.

Emotional Intelligence (EQ) facilitates career decision-making process and leads to decisions that can achieve greater satisfy career-related interests, values, and aspirations. Emotions experienced during this process have implications for the perception of risk related to specific career options, the kind of self-exploration individuals will engage in, and how information related to career choice will be processed.

Through EQ, participants will be able to cope and learn to manage one's self-awareness which affect their overall well-being and decision making.

Topic 2: Getting ready for Your Next Job

This course equips participants with the essential job search skills, knowledge and tools that will allow them to present themselves positively on paper, in person and on professional networking sites.

Participants will learn how to craft resumes that get the attention of prospective employers and recruiters and pivot their experiences to succeed and leave a good impression at job interviews (face-to-face or digital). This course also helps jobseekers to get started on using the popular professional networking site, LinkedIn, to create a professional brand for job search and networking.

Topic 3: Digital Marketing with Personal Branding

This course introduces students to tools for establishing a personal brand online and importance of establishing digital marketing strategy to promote their own personal brand.

Topic 4: Visual Analytics using Power BI

The course aims to equip the participant with the following:

Knowledge and Understanding: An understanding of how a dashboard works; its advantages and disadvantages and how it will be useful at workplaces.

Intellectual skills: How to apply the knowledge received during the course in developing the dashboard and using DAX functions, filters etc.

Practical skills: Participants will be developing their own dashboard. This exercise will enable them to show their creativity, skills obtained from the course and a satisfaction from attending the Power BI course.

Transferable skills and personal qualities: The knowledge and skills acquired from this course can be used at workplaces especially for those involved in KPI reporting, dashboard development or someone who have regular management meetings.

By the end of the course, learners will be able to:

- Upload data & and create data models
- Use DAX functions to enhance dashboards
- Associate links between variables for visual and descriptive analytics
- Find hindsight and insights from dashboard

Topic 5: Cyber Security for Non-IT Professionals

The objectives of the course is to create awareness and understanding of common cyber threats, both at home and at work. Typical mitigation methods will be discussed to help participants make better use of the available cyber security tools to protect themselves against cyber adversaries.

Upon completion of this course participants will be able to:

- Relate what is Cyber Security what are at stake
- Examine common threats (e.g. Phishing, malware)
- Use common mitigation methods
- Use basic wireless and smartphone security
- Outline security related laws (e.g. PDPA, CMA)

2. Certificate in Certificate in Sectoral Fundamentals for BIM

Topic1: AutoCAD 2018 Basics [2D & 3D]

Upon completing the module, participants will acquire the essential knowledge & core skills in the area of drafting & design. Participants will appreciate the simplistic and yet efficient use of AutoCAD 2018.

Topic 2: BIM Basic Essential Training [Architecture & C&S Track]

This module aims to provide trainees with a general knowledge of BIM work flow, basic modelling skills and submission processes so as to equip them with basic skills necessary for BIM adoption. There will be lectures and lab hands-on practical sessions for this course.

Topic 3: Essential REVIT MEP Modelling

This introductory module will equip the learner with overview of MEP BIM processes and essential REVIT software skills to model MEP services models. Its main objectives are:

- To provide the overview of MEP BIM processes
- To equip the trainees with Essential Revit MEP skills with hands on MEP modelling exercises

3. Certificate in BIM Management [Fundamentals, Deployment & Coordination Strategies]

Topic 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.

Topic 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.

Topic 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.

4. Certificate in BIM Management [Quality Assurance, Quantity Surveying & Construction Coordination]

Topic 1: 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.

Topic 2: 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.

Topic 3: 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

5. Certificate in BIM for Mechanical Electrical Plumbing (MEP)

Topic 1: Computational BIM for MEP Projects using Revit Dynamo

Computational BIM leverages on the innovative problem-solving approach where users define algorithms to have automated generation and manipulation of building-related information for better work efficiency, effectiveness and productivity gains. This course will equip the learners with essential Dynamo and python skills by going through many useful hands-on examples. Its main objectives are:

- To provide the overview of the Computational BIM and its benefits in modelling processes
- To equip the trainees with Revit Dynamo skills to automate and optimize the BIM modelling processes
- To equip the trainees with Basic Python skills to create customized Dynamo notes

Topic 2: Autodesk Navisworks for MEP BIM Project Collaboration

Multidisciplinary coordination and collaborations by using software tools such as Autodesk Navisworks become one of the most important aspects in the BIM/IDD journey nowadays. This course will equip the trainees with the essential Navisworks skills so that they will be

able perform the coordination and collaborations in the multidisciplinary projects. Its main objectives are:

- To provide the overall understanding of the BIM workflow for construction projects
- To provide the essential Navisworks skills to perform MEP project coordination and collaborations

Topic 3: Advanced REVIT MEP Modelling

This module will provide advanced Revit MEP skills for learners to have an understanding of creating Revit families, sheets, schedules and as well as computational BIM and their benefits in the construction processes. Its main objectives are:

- To equip the trainees with Advanced Revit MEP skills which are highly sought after in the building construction industry
- To provide the overview concept of computational BIM and its benefits in construction processes automation