

## **Module Synopsis**

### **PDC 1 Certificate in Air Conditioning and Energy Sustainability**

#### **Module 1: Air Conditioning System**

This module aims to equip students with practical skills on air conditioning and mechanical ventilation (ACMV) systems for various industrial and commercial buildings. The module covers in-depth theoretical and practical skills on a complete ACMV system design including cooling load estimation, duct sizing, piping sizing, chiller system and equipment. It also includes design, operation and maintenance of air-conditioning system for manufacturing facility such as cleanroom.

#### **Module 2: Green Mark & Energy Sustainability**

This module covers the following Green Mark and energy sustainability topics.

- Energy Efficient Design
- Passive Design
- Energy Audit
- Life Cycle Analysis
- Integrated Facilities Management
- Green Data Centres
- Sustainable and Renewable Energy

### **PDC 2 Certificate in Energy Modeling and Management**

#### **Module 3: Integrated Building Management Systems for Energy Efficiency**

This module is designed to provide students with a good working knowledge of the design and applications of integrated building management system. One of the objectives is to save energy and costs by implementing it. It aims to provide participants with in-depth knowledge of the procedures involved in the specification, design, installation, commissioning, operation, and maintenance of an IBMS. Application areas will include air-conditioning systems, fire detection and alarm systems and security systems.

#### **Module 4: Information & Energy Modeling of Facility**

This module aims to impart students with knowledge of energy sustainability through building energy modelling by using IESVE simulation software. The module covers modelling of building facility systems with inputs such as building structure, equipment load, materials, weather data and occupancy schedules. The course also provides students with the skills of heat load simulation, setup of basic ACMV and air flow systems, and performing the resulting energy consumption analysis. This module also includes design and modelling of ACMV service by using Autodesk Revit software.