

# Topic Synopsis (SGUS Certificate in Solar PV System Design)

## 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 Electrical Design and Acts & Regulations**

It covers the fundamentals of electrical principles, installation design and an overview of Acts and Regulations.

### **Topic 1: Electrical Principles**

Covers the basic laws and theorems that govern the operation of electrical circuits. Topics covered include scientific notation, engineering notation, metric prefixes, definitions of energy and power, power sources, measuring instruments, DC and AC concepts, simple series and parallel networks, electromagnetism, inductor, inductance, transformers, Kirchhoff's Voltage and Current Laws, Current and Voltage Divider Rules.

### **Topic 2: Electrical Installation Design**

Topics covered include an overview of the power generation, transmission and distribution system, electrical safety and protection principles, analyse and design electrical systems based on the relevant codes of practices, testing and troubleshooting of electrical installation circuits, application of technology such as the European Installation Bus (EIB) system in electrical installation.

### **Topic 3: Electricity Overview, Acts and Regulations**

This module introduces the electricity market, electricity acts and regulations. An overall view of how electrical power is generated, transmitted and distributed technologies. The relevant acts and regulations, licensing requirements, how to apply for connection to the electricity network are explained.

### **3. Certificate in PV system Design and Power Quality**

The certificate equips participants with the understanding of Power Quality and Energy System and the knowledge to perform Photovoltaic System Design.

#### **Topic 1: Photovoltaic System Design**

Topics covered include solar radiation calculations, different types of PV modules, and systems, design of grid-ties PV system and standalone PV system, electrical installation requirements according to the CP5 regulations or equivalent.

#### **Topic 2: Power Quality and Energy System**

This module furnishes participants on the causes of power quality issues, voltage dips and their effects on sensitive process and facilities, harmonics distortion and its effects on power system equipment, mitigation methods and power quality monitoring. Participants will learn the principles of different energy resources, including stand-alone and grid connected system, how to implement fuel cell technology in a variety of applications. The module also covers lighting technology principles and efficient lighting practices. The working principles/configurations of DC, AC and Chopper drives and various application areas of electrical drives will be covered.

### **4. Certificate in IoT, Data Management and 5G Technology**

This certificate introduces participants to emerging 5G Technology and impact of the pervasive internet of things (IOT).

#### **Topic 1: Appreciation of IoT and Data Management**

The objective of this course is to equip Technical Staff with an appreciation on internet of things (IoT) and data management. Participants can apply the knowledge and skills to help them improve their operational tasks and increase work productivity.

#### **Topic 2: Introduction to 5G Technology and Applications**

This course aims to provide participants with a general overview of the new 5G wireless technology, its requirements and applications, future development and impact on the industry.

Participants will be able to understand the importance of 5G technology as an enabler of industrial transformation such as smart nation and autonomous transport solutions. They will also acquire basic knowledge to engage service provider to deploy 5G technology to enhance the efficiency, reliability and quality of their operations and services.