Topic Synopsis (Certificate in SGUS Data Science Professional (AI & Machine Learning App Developer)

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. **Introduction to Programming for Data Science**

This certificate programme provides students with the fundamental skills to code applications to retrieve, clean and visualize data using the Python programming language. Students learn key concepts such as what structured and unstructured data are, and how they can create and manipulate relational and NoSQL databases to explore data and to create visualizations that can help them gain useful insights from it.

3. **Certificate in Data Science Projects Practices**

This certificate programme teaches students to plan end to end data science projects including activities involved, dependencies, external/internal resource needs and skills requirements. The approaches to manage stakeholder expectations as well as organising and managing a data science team on the delivery of data science projects will be covered. Participants will also be taught how to plan communications on status and activities reporting of data science projects.

4. **Certificate in Applied AI & Machine Learning**

This certificate programme enables students to apply machine learning to solve practical problems in many financial, medical, commercial, and scientific applications. Students will learn different concepts, programming models and algorithms that enables computational systems to adaptively improve their performance with experience accumulated from the observed data. This module focuses on two main approaches to machine learning: Supervised/Unsupervised Learning and Deep Learning.

Topic 1: AI App development

This certificate programme enables students to develop programs that employ artificial intelligence techniques to perform autonomous actions without human intervention. Students will learn how to develop AI enabled applications that are useful in a variety of business applications.

Topic 2: AI & ML Solutions development

This certificate programme provides students and opportunity to integrate knowledge and technical skills they have acquired from the course and experience problem solving, project management and communication as well as working as a team to develop an AI & Machine Learning solution to solve a real world problem.