Module Synopsis

Specialist Diploma in Sustainable Digital Manufacturing

PDC 1:	Post-Diploma Certificate in Manufacturing Digitisation	(120 hours)
1.	**MM9001: Essentials of Advanced Manufacturing**	**(60 hours)**

This module serves as a starting point for participants to gain an overview to the state of art in manufacturing processes and technology. Participants will be exposed to the industry transformation framework commonly used in Singapore, concepts of state of manufacturing technology such as digitization, automation, and connectivity. They will also learn how to perform basic Lean techniques and value stream mapping on their manufacturing process along with managing of quality of the product.

2.	**MM9002: AI-Driven Data Analytics for Sustainable Manufacturing**	**(60 hours)**

With sustainability becoming a core business strategy, carbon emissions become critical for monitoring. Participants will learn how to estimate, monitor, process and improve their carbon emissions with the use of Enterprise Resource Planning (ERP) and Manufacturing Execution Systems (MES) software. With the help of AI, participants learn to use AI tools and techniques to improve the efficiency of the manufacturing process, quality control and informed decisions in order to transit to a circular economy for product and process.

PDC 2:	Post-Diploma Certificate in Monitoring & Reporting for Sustainability	(120 hours)
1.	**MM9431: Sustainability Reporting & Strategies**	**(60 hours)**

This module will cover the basics on the drivers for sustainability and how companies are affected by the global sustainability movement along with local regulations. Participants will learn how standards like ISO 14064 can help their company to meet carbon emissions requirements by efficient energy use. They will also gain experience in performing carbon emissions calculations and reporting, with the use of basic carbon reporting tools.

2.	**MM9432: Energy Monitoring & Auditing**	**(60 hours)**

This module will equip learners with essential skills in monitoring and auditing energy usage within manufacturing environments. Learners delve into sustainable practices, utilizing cutting-edge digital tools and methodologies to analyse energy consumption patterns, identify inefficiencies, and propose tailored solutions for optimization. They will gain familiarity with standards such as ISO 50001. Through hands-on exercises and case studies, students gain proficiency in implementing energy-saving measures, contributing to the advancement of sustainable practices in manufacturing.