Module Synopsis and Duration for CCP for Food Manufacturing Professional and Associate

No.	Course Title	Duration (hr)	Course Objective
1	Food Safety Course Level 1	7.5	To equip food handlers of both retail and non-retail food establishments with the knowledge and application skills to follow food safety and hygiene procedures and policies, as well as maintain the cleanliness and upkeep of premises.
2	Food Safety Course Level 3	21	To equip personnel working in retail and/or non-retail food establishments with the knowledge and application skills to: • Conduct food safety and hygiene checks; • Identify hygiene lapses and manage non-conformances; and • Implement food safety and hygiene policies and procedures to ensure effective implementation of pre-requisite programmes and Hazard Analysis and Critical Control Points (HACCP)-based Food Safety Management System (FSMS).
3	Food Safety Course Level 4	28	This programme is designed for personnel in supervisory job roles which involves establishing and overseeing food safety standards in their food establishments. This training equips participants with occupational knowledge and skills in applying Hazard Analysis and Critical Control Point (HACCP) principles to develop, implement, maintain and update a HACCP-based Food Safety Management System (FSMS). This training also provides participants with knowledge and skills to perform internal audits of FSMS and manage and address non-compliances.
4	International & ASEAN Food Regulations	16	Encompasses international and ASEAN food laws and regulations and the role of leading international agencies such as WHO, FAO, Codex, WT, etc. International and ASEAN laws and regulations governing the manufacture, distribution and sale of food products are also included.
5	Sustainability Food Manufacturing	24	Food manufacturers face numerous challenges from ever-changing economic, social and environmental conditions. With ingredient costs climbing, and global climate change becoming a major issue, food producers must now address environmental concerns, social responsibility and economic viability when shaping their food processing techniques for the future. This module analyses the sustainability issues in food manufacturing. Students will be exposed to minimal food processing techniques and novel technologies. Appropriate tools will be introduced and applied to improve food manufacturing processes in order to

			eliminate waste, decrease variation, enhance product quality and increase productivity.
6	Sustainable Food Packaging	8	Packaging is an essential element of response to address key challenges of sustainable food consumption on the international scene, which is clearly about minimizing the environmental footprint of packed food. An innovative sustainable packaging aims to address food waste and loss reduction by preserving food quality, as well as food safety issues by preventing food-borne diseases and food chemical contamination. Moreover, it must address the long-term crucial issue of environmentally persistent plastic waste accumulation as well as the saving of oil and food material resources.
7	Cold Chain Management	16	Covers governance and controls in perishable food products cross-border trading; food supply chain from 'farm to fork'; challenges and supporting mechanisms to make sure safety of food for consumers.
8	Food Product Design	16	Today, consumers look for new experiences in the food they consume. Food technologists have to understand the market environment and unmask consumer insights before they embark on laboratory-based product development activities. This module aims to explore the business and technical perspectives for development of new product concepts. Using the knowledge and skills learnt, students will be able to identify a product development strategy and design product concepts, taking into consideration consumer needs & preferences through user empathy studies, generation of concepts from the identified needs, and maximise commercial viability through systematic planning of the product development process.
9	Sensory and Consumer Insights	16	Sensory Evaluation is a very important tool for product development. Food manufacturers are recognising the value of using consumer and sensory studies to measure product acceptability, differences, improvements and opportunities. These basics of sensory evaluation and techniques have been taught to students in modules like Food Design and Product Development or equivalent in the diploma programmes. This module aims to provide deeper and broader knowledge and practical tools in experimental design and sensory analysis. Case studies combined with hands-on sessions using statistical methods needed for sensory and consumer insight work will be used to reinforce understanding in this field.

10	Alternative Protein	16	In countries with economic wealth, there is growing consumer awareness of, and interest in, alternative proteins. Meat has been the main source of protein in developed markets for years, and there has been an increased appetite for traditional protein in developing markets in recent years. However, changing consumer behavior and interest in alternative-protein sources—due in part to health and environmental concerns as well as animal welfare—have made way for growth in the alternative-proteins market. The module aims to share how alternative proteins affects everything, the sources of raw materials, production transforming raw ingredients into alternative protein products as well as the R&D involvement on the alternative proteins.
11	WSQ Follow Good Food Labelling Practices	16	Provides information on labelling requirements in all pre-package food products for sale in Singapore. The knowledge will serve as a basis for effective review of the food labelling to meet requirements.
12	WSQ Apply Packaging Materials and Technology in Food Packages	21	Provides an overview of the fundamental considerations in food packaging and preservation. Each packaging material will be examined alongside various processing methods such as retort and aseptic processing. Packaging techniques such as Modified Atmosphere Packaging (MAP), active and intelligent packaging will also be explored.
13	Introduction to Artificial Intelligence (AI) & Machine Learning	7	This course aims to introduce artificial intelligence (AI) and machine learning (ML). The course focuses on learning how to apply AI and ML to solve real-life problems. Through practical sessions, participants will experience the setting up and use of a simple machine learning tools that do not require coding.
14	Intermediate Robotic Process Automation	14	This course builds on the Robotic Process Automation (RPA) course offered by Singapore Polytechnic and aims to further equip participants with the enhanced skills to create useful RPA scripts to automate more complex desktop processes. Participants will learn how to achieve this through using a RPA software.
15	Introduction to Data Analytics and Applications	8	The objective of this course is to equip participants with the knowledge of data analytics and various tools of data wrangling, data visualisation and data analytics. Participants will also be able to apply these analysis tools in supervised/unsupervised to their data when designing and developing their future intelligent systems.
16	Applied Data Analytics in Business	10.5	This course consists of a 1.5 day workshop. Where practitioners will be invited to share their insights and experience with the participants. Through a blend of facilitated learning and hands on activities, you will learn about:

			How Analytics is being used in different industries? What is Big Data? Business Analytics Framework. Case studies will be discussed on how companies have put analytics to use through this framework. Analytics tools and the importance of Cleaning Data. Applying Analytics to real data and making sense of it. A quick hands on with appropriate software like MS Excel and Tableau will demonstrate how analytics can be used to successfully plan for future growth in your company.
17	Appreciation of IoT and Data Management	8	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.