Module Synopsis

Diploma (Conversion) in AI-assisted Web Development & Programming

PDC 1:	Post-Diploma Certificate in Web Development Fundamentals	(150 hours)

1.	ST4011:	Fundamentals of Web Development Technology	(60 hours)

This module provides participants with the knowledge and skills to understand different evaluation strategies for a user interface prototype and design as well as develop interactive web application. Topics covered include Internet and HTTP protocol, basic web design principles, web interface and navigation, HTML, hypertext links, images, tables, frames, forms and different evaluation methods.

Participants will also be taught how to apply Cascading Style Sheets to maintain consistencies across webpages. It also provides an overview of other web technologies such as Web Client programming with JavaScript, Web Development Methodology and Web Development Platforms.

2.	IT8057:	Fundamentals of Programming	(60 hours)

This module introduces participants to the fundamentals of programming using Python, a beginner-friendly language. Participants will be able to create and debug simple programs to solve real-world problems by coding computer programs. Key topics include program structure, variables, control constructs, lists, functions, classes, and file handling. Additionally, the module covers basic debugging techniques, and incorporates usage of AI tools to improve coding productivity and efficiency.

3.	IT8052:	Visual Interface Design	(30 hours)

This module equips participants with graphic design skills, techniques and use of image processing tools like Photoshop to produce digital content in areas of web applications. Basic design principles like colour models, typography layout and design elements will also be covered. Participants will be able to apply the use of design principles to create compelling online digital content.

PDC 2:	Post-Diploma Certificate in Web Programming	(150 hours)

1.	IT8055:	Backend Development	(60 hours)

This module provides participants with the techniques and skills required for server-side web development using Python flask. The module will review the basic database Create, Retrieve, Update, Delete (CRUD) operations and examine the Representational state transfer (REST) concepts. At the end of the module, participants will be able to build and configure a backend server using the python flask framework, as well as a RESTful Application Programming Interface for the front-end to access backend services.

Participants will also be introduced to the Open Worldwide Application Security Project (OWASP) top 10 web security vulnerabilities resource and be informed of the importance of backend validation.	
2. ST4012: Web Programming	**(60 hours)**
This module teaches techniques and skills required for client-side web programming. Participants will learn to use JavaScript and JQuery for client-side programming to manipulate the DHTML object model to achieve dynamism in web pages.	
3. IT8058: Capstone Project	**(30 hours)**
This module requires participants to work in a team to develop a web project that integrates the frontend and backend application they built in the 2 modules in PDC2. Participants would be taught some of the best practices in the software development lifecycle including project management with agile, change management and conducting testing in projects, which they will be applying in the project.	