

# **Module Synopses**

## **Semester One**

### 1. ST4011 Fundamentals of Web Development Technology

This module provides the students 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. It also provides an overview of other web technology such as Web Client and Server Side programming, Web Development Methodology and Web Development Platforms. In addition, students will appreciate various hardware and software platforms, and learn basic web administration.

### 2. ST4022 Web System Development Techniques

This module teaches objected-oriented analysis and design techniques for web system development. Key topics will include requirements gathering, analysis and design using UML and Scrum methodologies. This module will adopt a case study approach where students model a web application using the object-oriented analysis and design methodology.

### 3. ST4013 Java Programming

This module teaches object-oriented programming and problem solving using Java Programming Language. It equips students with skills in design, development, test and deployment of enterprise application. Topics covered include language basics, creating and communicating with objects and graphical user interface, interfaces and abstract classes and multi-threading. At the end of the module, students will be competent in developing Java applications with an interactive user interface, in an object-oriented approach.

## **Semester Two**

### 4. ST4021 Java Server Programming

This module teaches the basic features of the server side programming (servlets and JSP) and its application to Internet. Students will be able to develop a mini Java client/server project over the Web. The topics covered in this module include Database Access, introduction to Servlets and JavaServer Pages, Servlet Technology, Cookie and Session Objects, integration of Servlets and JSP. Some secure coding concepts such as use of stored procedures to prevent SQL injection, importance of exception handling, logging and role based authentication will also be covered. At the end of the module, students will be competent in developing Java server web applications, which can access data from an enterprise level database hosted on the server.

### 5. ST4012 Web Programming

This module teaches techniques and skills required for client-side web programming. Students will learn to use JavaScript for client-side programming, Cascading Style Sheets to maintain

consistencies across web pages as well as to manipulate the DHTML object model to achieve dynamism in web pages. Students will also be taught how to adapt their web pages for mobile devices using HTML5 and Mobile jQuery for viewing on mobile web browsers.

#### 6. ST4024 Database Management Systems

This module introduces the fundamentals of the relational database model. Key topics include information modeling, normalization, database design, stored procedure and database implementation. Structured Query Language (SQL) will be used to create, manipulate and retrieve data in a relational database.