

Module Specifications

Year/Level: 5
Programme: AI

Module: Algorithms and Data Structures**Module Code:** 5FTC2091**Credits:** 15**Module Description:****Mandatory**

This module aims to give students a detailed understanding of the importance of the relationship between problems and their solutions through the development and use of algorithms, data structures, and their implementation. Understand the significance of a range of underlying mathematical concepts. Appreciate a range of algorithms and data structure types and their application in the problem-solving process.

Module: Database Systems**Module Code:** 5FTC2090**Credits:** 15**Module Description:****Mandatory**

This module aims to enable students to determine the advantages and disadvantages of the application of multiple database paradigms. Plan and critique the application of database-related techniques, tools, and paradigms. Develop an understanding of the key function of a Database Management System. Develop advanced skills in database design and obtain skills to support the development of complete database systems.

Module: Accessibility and Usability**Module Code:** 5FTC2089**Credits:** 15**Module Description:****Mandatory**

This module aims to enable students to develop their understanding of the legal, social, ethical and professional issues that pertain to accessibility and usability concerns. Additionally, it aims to deepen students' awareness of the implications of accessibility and usability problems. This module also aims to enable students to further develop their communication skills and apply these effectively in analysing and communicating accessibility and usability issues.

Module: Operating Systems and Networks**Module Code:** 5FTC2095**Credits:** 15**Module Description:****Mandatory**

This module aims to enable students to consolidate their understanding of operating systems and how they work by using alternative operating systems that some students have used and doing so as a system administrator rather than an ordinary user. Develop their detailed understanding of computer networks, how they operate, and what must be done to configure them correctly. Become more familiar with the relationships between theoretical concepts and practical applications in computing. Build confidence in using command line tools and configuration files to work with operating systems and networks.

Module: Computing Things**Module Code:** 5FTC2094**Credits:** 15**Module Description:****Mandatory**

This module aims to enable students to understand low-power, low-bit-rate computing devices. Additionally, this module aims to enable students to develop skills and understanding for interfacing such devices with sensors and actuators to gather data from the environment. This module also aims to enable students to discuss cyber security measures available for protecting data for small, embedded platforms.

Module: Artificial Intelligence**Module Code:** 5FTC2093**Credits:** 15**Module Description:****Mandatory**

This module aims to give students first contact with and a broad overview of Artificial Intelligence (AI). Understand the algorithms underlying key basic AI notions. Additionally, it aims to enable students to acquire knowledge of programming techniques specific to AI, and program simple AI systems.

Module: Principles and Practices of Large-Scale Software Development**Module Code:** 5FTC2092**Credits:** 30**Module Description:****Mandatory**

This module aims to enable students to develop practical skills in developing large software systems for maintainability and reusability by realising and applying a range of object-oriented tools and techniques in a programming language such as Java; employ software engineering tools and techniques used in the specification, design, testing, and implementation of large-scale programs; experience a professional, team-based approach to software development, and appreciate the issues that arise; apply learned knowledge and skills to enable them to successfully compete for and successfully complete a CS placement.