

Module Specifications

Year/Level: 4
Programme: CyberSecurity

Module: From Silicon To C**Module Code:** 4FTC2065**Credits:** 30**Module Description:****Mandatory**

This module aims to enable students to develop a practical appreciation of the multilevel organisation of computer systems, including the basics of layered computers. The module will develop students' knowledge and skills through problem-solving and experimentation with computational structures: circuits, machine programs, and high-level programs using simulators and development environments.

Module: Data Modelling for Databases**Module Code:** 4FTC2063**Credits:** 30**Module Description:****Mandatory**

This module aims to enable students to understand the progression from domain to physical models of data and the practical use of tools and techniques to support data modelling at all stages. Students will be exposed to and use multiple data modelling approaches. The relational model by Codd will be introduced. Students will deploy appropriate theories, practices, and tools for the specification, design, and implementation of database systems for a variety of applications.

Module: Introduction to Programming and D**Module Code:** 4FTC2064**Credits:** 30**Module Description:****Mandatory**

The aims of this module are to teach students some key concepts in discrete mathematics and high-level programming; to illustrate the links between the two; to encourage them to apply these concepts in the modelling and solution of small-scale computational problems; to enable them to develop practical programming skills sufficient to implement algorithms in an example high-level language (Python 3); and to show them how to test and debug the resulting programs.

Module: Team Software Project**Module Code:** 4FTC2067**Credits:** 15**Module Description:****Mandatory**

This module aims to enable students to develop employability skills through a subject-related project. Work within a team to meet a prescribed collective objective. Develop and extend fundamental lifelong skills. Understand the responsibility for their actions where they affect others.

Module: Computational Problem Solving**Module Code:** 4FTC2066**Credits:** 30**Module Description:****Mandatory**

This module aims to enable students to build upon and further develop their computational thinking and practical programming skills. Broaden and deepen their knowledge and understanding of discrete structures and how they may be used to model and solve computational problems. Understand and construct proofs. Refine and enhance their practical programming skills in a high-level language (Python) to the point where they can develop solutions to well-specified problems.