School of Computing Science

Third/Fourth Year Computing Science

Ensuring broad and state-of-the-art Computing Science expertise

At the beginning of 3rd year, students enrol in either the **Computing Science** or **Software Engineering Honours** degrees**.** As soon as the second half of 3rd year, students can also choose to specialise in one of a number of areas (Data Science, Human Computer Interaction, Security, Systems, Theoretical Computer Science). Students may also enrol in a **Joint Honours** degree (Computing Science combined with another subject), or take a three-year **Computing Science (Designated)** degree.

Depending on which degree or specialisation you are enrolled in, you will take a selection from the following 3rd/4th year courses:

Professional Software Development: modern software development methods, incorporating an extended group-based software development exercise.

Systems Programming: programming in C, including concurrent programming in both C and Java.

Interactive Systems: techniques and tools for modelling, implementing and evaluating interactive systems.

Algorithmics I: design and analysis of algorithms, NP-completeness, and computability.

Database Systems: design, creation, running and development of a relational database, and fundamental theories and methods of the relational data model.

Operating Systems: concepts of an operating system, and algorithms and techniques for specific operating systems problems.

Network Systems: theory of communications, and technologies that support networked computer systems.

Professional Skills and Issues: legal, social and ethical issues relating to professional computing.

Data Fundamentals: fundamental operations on vectors and matrices, time series, scientific visualisation and basic probabilistic computation.

Text as Data: introduction to the principles and practical skills necessary for analysing text/documents, in both unsupervised and supervised approaches.

Cyber Security Fundamentals: foundational aspects of computer security, including a coverage of cyber attacks and cyber defences.

Enterprise Cyber Security: cyber security management within an organisation.

Team Projects

All 3rd year students work as part of a team of four or five students throughout the year. Each team negotiates a software project with an external real-world customer and works with them throughout the year.

Past projects include a sports-specific social media platform, a visualisation tool for a tracking system, a natural language search tool for restaurant reservations and an augmented reality game exploring Glasgow University's stunning campus.