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.