

# YEAR 10 APPLIED COMPUTING

Applied Computing elective provides students with the framework and foundation to continue the study into VCE Computing. This exciting new area of study explores how our lives are impacted by technology for now and the future, and provides students with an understanding of the technical underpinnings of information systems in a range of settings. The study is divided into three areas; digital systems - the roll of hardware and software in managing data in networked systems; data and Information – the processes involved in manipulating data to form information; and creating digital solutions – using data structures and programming techniques to solve problems.

Students will have an understanding of the interactions between computer hardware, software and users. Students will examine the key hardware components that are required for communications, storage, processing and retrieval of data.

Students will develop skills and confidence in coding through web page development, applications development and algorithm design to solve more complex problems. Students will be working individually and collaboratively in small teams to complete enquiry-based projects of their own choosing. Examples may include 2D or 3D games development, robotics, web-applications or other areas of computing. Students will develop their understanding of digital citizenship by engaging in online forums and knowledge bases to assist them with their projects.

Students will be able to:

- Work independently in enquiry-based ICT projects to achieve set outcomes
- Recommend appropriate computer hardware for a range of settings, taking into consideration: networking, security, hardware and software limitations
- Use “real-time” collaborative software applications to support high quality communication with their peers and online communities
- Model computational thinking through pseudo code
- Develop skills in logical and analytical reasoning to write computer code (programming) for desktop, mobile or microcontrollers (robotics / STEM projects - Arduino or Raspberry Pi), 2D or 3D games.
- Use industry standard web-page coding to build functional web pages
- Identify impacts and strategies to manage privacy, ethical and legal obligations in relation to selected information systems.