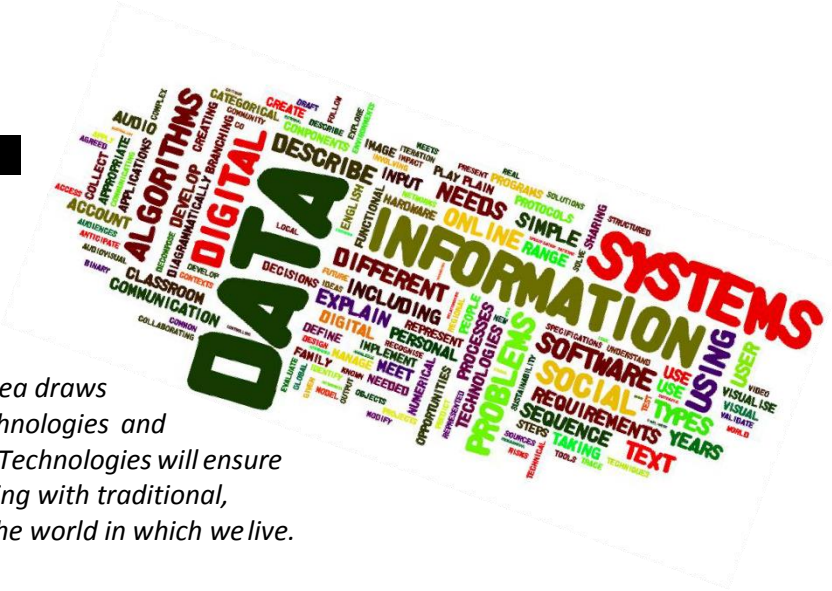
TECHNOLOGIES: DIGITAL

ELECTIVE SUBJECT: Across Four Semesters

WHY STUDY DIGITAL DESIGN?



Digital Technologies enrich and impact on the lives of people and societies globally. Digital Technologies, in their development and use, are influenced by and can play an important role in transforming, restoring and sustaining – our societies and our natural, managed, and digital environments. The Technologies learning area draws together the distinct but related subjects of Design Technologies and Digital Technologies. The Australian Curriculum: Digital Technologies will ensure that all students benefit from learning about and working with traditional, contemporary and emerging technologies that shape the world in which we live.

COURSE AIMS:

Digital Technologies aim to develop the knowledge, understanding and skills to ensure that individual and collaboratively students:

- **design** and are creative, innovative and enterprising when using traditional, contemporary and emerging digital technologies, and understand how technologies have developed over time
- frame problems and create solutions using the computational thinking concepts of **abstraction**; **data collection,** representation and interpretation; specification, **algorithms** and implementation; **digital** systems; and interactions and impact of solutions
- use **digital** systems to efficiently and effectively automate the transformation of data into information and to creatively communicate ideas in a range of formal and informal settings
- apply **protocols and legal practices** that support safe, ethical and respectful communications and collaboration with known and unknown audiences when developing social and intellectual capital
- monitor, analyse, predict and shape the interactions within and between information systems and the impact on individuals societies, economies and environments

COURSE ORGANISATION:

The study of Technologies in Computers can be studied across 4 semesters. The level of work and understanding increases as students move through the Digital Computer units. Students build on previous knowledge to complete more complex programming and production scenarios.

Semester 1 – TC521 – Computer Coding - Introductory Unit

Through the use of guided instruction, problem solving and online tutorials, students will design and produce computer programs and simple games, learning the basics of computer coding with a real world focus. They will begin to program online resources (author websites) and develop basic games using Visual Studio. Students will develop problem solving skills, logic sequencing and syntax principles to achieve the desired outcome. A variety of tasks will be given over the semester following the software design life cycle.

Assessment

Assessment will be completed in class to utilise the software offered in the computer labs. Students will complete one major challenge per term involving a detailed design write up as well as digital computer theory involved in the product being designed. Students will follow industry standards.

Semester 2 – TC521 – Computer Coding - First time introduction unit

Through the use of guided instruction, problem solving and online tutorials, students will design and produce computer programs and simple games, learning the basics of computer coding with a real world focus. They will begin to program online resources (author websites) and develop basic games using Visual Studio. Students will develop problem solving skills, logic sequencing and syntax principles to achieve the desired outcome. A variety of tasks will be given over the semester following the software design life cycle.

Assessment

Assessment will be completed in class to utilise the software offered in the computer labs. Students will complete one major challenge per term involving a detailed design write up as well as digital computer theory involved in the product being designed. Students will follow industry standards.

Semester 2 – TC533 – Web & Database Design (must have completed TC521)

This course is built on the foundations of TC622. Through the use of guided instruction, problem solving and online tutorials, students will design and produce websites using Adobe Dreamweaver, learning the basics of online design and publishing. They will develop a detailed design, the application itself and reflect on future versions of their programs. Students will also discover how databases are structured and store information and plan to develop their own databases in Microsoft Access.

They will begin to program computer applications and become online digital authors. Students will learn problem solving skills, logical sequencing and syntax principals to achieve the desired outcome. A variety of tasks will be given over the semester utilising the Software Development Life Cycle.

Assessment

Assessment will be completed in class to utilise the software offered in the computer labs. Students will complete one major challenge per term involving a detailed design write up as well as digital computer theory involved in the product being designed. Students will follow industry standards.