Digital Solutions

General senior subject

General

Recommendation

It is recommended that students have studied Digital Technologies before attempting this subject.

Rationale

Digital Solutions enables students to learn about algorithms, computer languages and user interfaces through generating digital solutions to problems. Students engage with data, information and applications to create digital solutions that filter and present data in timely and efficient ways while understanding the need to encrypt and protect data. They understand computing's personal, local and global impact, and the issues associated with the ethical integration of technology into our daily lives.

Students use problem-based learning to write computer programs to create digital solutions that: use data; require interactions with users and within systems; and affect people, the economy and environments. They develop solutions using combinations of readily available hardware and software development environments, code libraries or specific instructions provided through programming.

Students create, construct and repurpose solutions that are relevant in a world where data and digital realms are transforming entertainment, education, business, manufacturing and many other industries.

Pathways

A course of study in Digital Solutions can establish a basis for further education and employment in the fields of science, technologies, engineering and mathematics.

Objectives

By the conclusion of the course of study, students will:

- recognise and describe elements, components, principles and processes
- symbolise and explain information, ideas and interrelationships
- analyse problems and information
- determine solution requirements and criteria
- synthesise information and ideas to determine possible digital solutions
- generate components of the digital solution
- evaluate impacts, components and solutions against criteria to make refinements and justified recommendations
- make decisions about and use mode-appropriate features, language and conventions for particular purposes and contexts.

Delivery (mode, time requirements, lessons)

Students are expected to undertake independent study to complete tasks and assessment in accordance with the Work Rate Calendar. Students also have access to scheduled sessions each week. Live sessions are delivered via the online learning management system.

Student requirements

Computer, access to email, scanner and internet, telephone and USB headset with microphone, exercise book, stationery.

Structure

Unit 1	Unit 2	Unit 3	Unit 4
Creating with code • Topic 1: Understanding digital problems • Topic 2: User experiences and interfaces • Topic 3: Algorithms and programming techniques • Topic 4: Programmed solutions	**Application and data solutions** • Topic 1: Data-driven problems and solution requirements • Topic 2: Data and programming techniques • Topic 3: Prototype data solutions	**Digital innovation** • Topic 1: Interactions between users, data and digital systems • Topic 2: Real-world problems and solution requirements • Topic 3: Innovative digital solutions	**Digital impacts** • Topic 1: Digital methods for exchanging data • Topic 2: Complex digital data exchange problems and solution requirements • Topic 3: Prototype digital data exchanges

Assessment

Formative assessment

Unit 1		Unit 2	
Investigation	20%	Project - Folio	25%
Project	30%	Examination	25%

Summative assessment

Unit 3		Unit 4	
Summative internal assessment 1 (IA1): Investigation — technical proposal	20%	Summative internal assessment 3 (IA3): Project — folio	25%
Summative internal assessment 2 (IA2): Project — digital solution	30%	Summative external assessment (EA): Examination	25%

In Units 3 and 4 students complete four summative assessments. The results from each of the assessments are added together to provide a subject score out of 100. Students will also receive an overall subject result (A–E).

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