Digital Solutions

General senior subject

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.

Structure

<table>
<thead>
<tr>
<th>Unit 1</th>
<th>Unit 2</th>
<th>Unit 3</th>
<th>Unit 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creating with code</td>
<td>Application and data solutions</td>
<td>Digital innovation</td>
<td>Digital impacts</td>
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<tr>
<td>• Understanding digital problems</td>
<td>• Data-driven problems and solution requirements</td>
<td>• Interactions between users, data and digital systems</td>
<td>• Digital methods for exchanging data</td>
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<tr>
<td>• User experiences and interfaces</td>
<td>• Data and programming techniques</td>
<td>• Real-world problems and solution requirements</td>
<td>• Complex digital data exchange problems and solution requirements</td>
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<tr>
<td>• Algorithms and programming techniques</td>
<td>• Prototype data solutions</td>
<td>• Innovative digital solutions</td>
<td>• Prototype digital data exchanges</td>
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<td>• Programmed solutions</td>
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Assessment
BrisbaneSDE will devise assessments in Units 1 and 2 to prepare students for Units 3 and 4 assessment.

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).

Summative assessments

<table>
<thead>
<tr>
<th>Unit 3</th>
<th>Unit 4</th>
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</thead>
<tbody>
<tr>
<td>Summative internal assessment 1 (IA1):</td>
<td>Summative internal assessment 3 (IA3):</td>
</tr>
<tr>
<td>• Investigation — technical proposal</td>
<td>• Project — folio</td>
</tr>
<tr>
<td>20%</td>
<td>25%</td>
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<tr>
<td>Summative internal assessment 2 (IA2):</td>
<td>Summative external assessment (EA):</td>
</tr>
<tr>
<td>• Project — digital solution</td>
<td>• Examination</td>
</tr>
<tr>
<td>30%</td>
<td>25%</td>
</tr>
</tbody>
</table>

Requirements

USB flash drive