DIGITAL TECHNOLOGIES - IT

- Years 7 & 8 Digital Technologies
- Years 9 & 10 Creative IT
- Years 9 & 10 Programming
- Year 10 Business IT
- VCE Computing
- VCE Informatics
- VCE Software Development
- VCE Certificate III in IDMT - Game Programming (VET)
Courses of study in this area seek to develop student skills in hardware and software that enables data to be digitally processed, stored and communicated. Students investigate how data can be used to access, process, manage and present information; model and control events; construct new understanding; and communicate with others.

Students learn to use a wide range of tools, techniques and procedures for processing and communicating information to meet specific needs.

Year 7 & 8

Digital Technologies
At years 7 and 8, students will develop their skills in computer vocabulary, covering different hardware components, software and networks. They will also look at effective file management strategies, including the correct naming of files and folders, and the benefits of backing up important data. Along with this, students will further enhance their problem solving skills, by looking at how digital technologies can be used to solve real world problems.

Over the course of two years, a range of topics will be covered including:
• Data and information systems
• Game and application coding
• Robots and integrated technologies
• Multimedia design and creation

Year 9

Information Technology subjects in Year 9 are part of the Technology and Art electives. Students may select Creative IT and/or My Program Rules.

Students in Year 9 need to complete at least one compulsory unit of Technology and they need to ensure they complete at least three units of Technology over Years 9 and 10.

Creative IT
This semester unit consists of learning how the computer can be used as a tool for making creative solutions. Skills and knowledge are developed in image manipulation, using Adobe Photoshop and cartoon animation, using Adobe Animate.

My Program Rules
This semester unit consists of learning how the computer can be used as a tool for making creative solutions. Skills and knowledge are developed in image manipulation, using Adobe Photoshop and cartoon animation, using Adobe Animate.

Business IT
This semester unit consists of learning how computers are used to assist in the running and management of a business. Skills and knowledge are developed in web development, spreadsheets and desktop publishing.

Accelerated Studies
Students with strong academic performance in IT may begin Computing Units 1 & 2 or VET Certificate III in IDMT - Game Programming at Year 10.

Computing Units 1 & 2
This VCE unit focuses on how data, information and networked digital systems can be used to meet a range of users’ current and future needs. Skills and knowledge are covered in areas of data manipulation and visualisation, networking, ICT issues and programming.

VET Certificate III in IDMT - Game Programming
This VET unit provides students with the knowledge and skills needed to develop fun and professional looking games using the Unity 3D engine. It also involves practical hands-on training with computer hardware and software.

Year 10

Information Technology subjects in Year 10 are part of the Technology electives. Students may select Creative IT and/or 2D Game Development and/or Business IT.

Creative IT
This semester unit consists of learning how the computer can be used as a tool for making creative solutions. Skills and knowledge are developed in cartoon animation, using Adobe Animate, using Java and 3D modelling and printing using Tinkercad.

2D Game Development
This semester unit consists of learning how the computer can be used as a tool for making retro 2D games. Skills and knowledge are developed in game creation, using GameMaker and Visual Basic. Relevant areas of the game development process are covered including design and evaluation.

Accelerated Studies
Students with strong academic performance in IT may begin Computing Units 1 & 2 or VET Certificate III in IDMT - Game Programming at Year 10.

Computing Units 1 & 2
This VCE unit focuses on how data, information and networked digital systems can be used to meet a range of users’ current and future needs. Skills and knowledge are covered in areas of data manipulation and visualisation, networking, ICT issues and programming.

VET Certificate III in IDMT - Game Programming
This VET unit provides students with the knowledge and skills needed to develop fun and professional looking games using the Unity 3D engine. It also involves practical hands-on training with computer hardware and software.
The rapid pace of developments in digital systems, and the increasing availability of digitised data is having major influences on many aspects of society and the economy.

This study equips students with the knowledge and skills to be discerning users of digital systems, data and information and creators of digital solutions.

VCE Computing focuses on the application of a problem-solving methodology, and strategies and techniques for managing information systems in a range of contexts, to create digital solutions that meet specific needs.

The study examines the attributes of each component of an information system including people, processes, data and digital systems (hardware, software, networks), and how their interrelationships affect the types and quality of digital solutions.

VCE Computing provides a pathway to further studies in areas such as computer science, information systems, business, systems engineering, robotics, linguistics, logistics, database management and software development, and to careers in digital-technologies based areas such as information architecture, web design, business analysis and project management.

Unit 1
This unit focuses on how data, information and networked digital systems can be used to meet a range of users’ needs.

Students collect primary data when investigating an issue and create a solution that graphically presents the findings.

They examine the technical underpinnings of wireless and mobile networks, and security controls to protect data.

Students acquire and apply their knowledge of information architecture and user interfaces, together with web authoring skills, when creating a website to present different viewpoints on a contemporary issue.

Development of knowledge and skills in Microsoft Excel and Adobe Dreamweaver.

Assessment: Unit 1
Graphical Solution
Networking Solution
Website Solution

Unit 2
The unit focuses on data and how the application of computational, design and systems thinking skills support the creation of solutions.

Students develop their thinking skills when using a programming language to create solutions.

They develop a sound understanding of data and how a range of software tools can be used to extract data from large repositories and manipulate it to create visualisations.

Students create a solution using database management software and explain how they are personally affected by their interactions with a database system.

Development of knowledge and skills in Microsoft Excel, Access and Visual Basic.

Assessment: Unit 2
Programming Folio
Data Visualisation Solution
Database Solution
Unit 3

Informatics
This unit focuses on data and how it is acquired, managed, manipulated and interpreted to meet a range of needs. Students investigate interactive online solutions, such as websites and applications, and consider how users interact with these solutions. They examine how databases store and manipulate data. Students create diagrams that depict how users interact with online solutions, and acquire and apply knowledge and skills in the use of an RDBMS to create a solution.

Unit 4

Informatics
This unit focuses on strategies and techniques for manipulating, managing and securing data and information to meet a range of needs. Students design, develop and evaluate a multimodal, online solution. They use a project plan to monitor progress and assess the effectiveness of a project.

Development of knowledge and skills in Adobe Dreamweaver and Microsoft Access.

Assessment: Unit 3 & 4
- Database Solution
- Project Plan
- Website Solution
- Management Test

Unit 3

Software Development
This unit focuses on the application of a problem-solving methodology and underlying skills to create purpose-designed solutions using a programming language. Students develop a detailed understanding of the analysis, design and development stages and use a programming language to create working software modules.

Unit 4

Software Development
This unit focuses on how the information, needs of individuals and organisations are met through the creation of software solutions used in a networked environment.

Development of knowledge and skills in Microsoft Visual Basic.

Assessment: Unit 3 & 4
- Prototype Programming Solution
- Analysis and Design Report
- Full Programming Solution
- Evaluation Security Test
VCE CERTIFICATE III IN IDMT GAME PROGRAMMING (VET)

The VET IDMT Certificate III in Game Programming provides students with knowledge and skills needed to develop games using Unity 3D. It is designed to introduce the many career opportunities available for programmers in games, interactivity and creative industries. The certificate has been developed by AIE (Academy of Interactive Education) and is intended to give participants an understanding of skills and techniques necessary to create a range of fun, playable games.

Game programmers drive the game development process, creating the framework, functionality and interaction in the game. Regarded as the essential ingredient in the development process, game programmers are highly valued and continually in demand.

This certificate is offered to students at Year 11 and is designed to be continued in Year 12. As well as a study score, students will have full completion of Certificate III at the end of Unit 4.

Year 11 Core Modules:
- Operate application software packages
- Participate effectively in WHS communication and consultative processes
- Work and communicate effectively in an IT environment
- Produce digital images for the web
- Use social media tools for collaboration and engagement
- Run standard diagnostic test

Year 12 Modules:
- Use advanced features of computer programs
- Install, configure and secure a small office or home office network
- Maintain equipment and software
- Create user documentation
- Implement system software changes
- Install and optimise operating system software
- Provide IT advice to clients

Assessments: Units 1 to 4
Satisfactory completion for Units 1 to 4 is based on achievement of the set modules specified for each unit. Students could be assessed using the following:
- Workbook
- Work Performance Task
- Case Study
- Product Creation
- Test
- Examination

Contribution to final Assessment
Students wishing to receive a study score for Units 3&4 must undertake scored assessment.
- Coursework tasks contribute to 66% to the overall score.
- End of year examination contributes 34% to the overall score.
The VET Business Certificate provides students with the basic knowledge and skills of communication, teamwork, use of business technology, processing of financial documents and information handling, providing an entry point into business and the commercial world.

It is recommended for students wishing to gain employment as a clerical or administrative worker across all industries.

This certificate is offered to students at Year 11 and is completed in Year 12 with students at this level undertaking modules from the Certificate III course.

Assessment: Units 1 to 4

Satisfactory completion for Units 1 to 4 is based on achievement of the set modules specified for each unit. Students could be assessed using the following:

- Workbook
- Work Performance Task
- Case Study
- Product Creation
- Test
- Examination

Year 11 Modules:
- Contribute to health and safety of self and others
- Communicate in the workplace
- Work effectively with others
- Produce simple word processed documents
- Organise and complete daily work activities
- Deliver a service to customers
- Process and maintain workplace information
- Handle mail
- Create and use spreadsheets
- Communicate electronically

Year 12 Modules:
- Organise personal work priorities and development
- Organise workplace information
- Design and produce business documents
- Deliver and monitor a service to customers
- Recommend products and services

Contribution to final Assessment:

Students wishing to receive a study score for Units 3&4 must undertake scored assessment.

- Coursework tasks contribute to 66% to the overall score.
- End of year examination contributes 34% to the overall score.
## INFORMATION TECHNOLOGY PATHWAYS

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<thead>
<tr>
<th>Year 7 &amp; 8</th>
<th>Year 9 &amp; 10</th>
<th>Year 11</th>
<th>Year 12</th>
<th>Possible Careers</th>
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<tbody>
<tr>
<td>Year 7 Digital Technologies (compulsory)</td>
<td>Year 9 Programming Stream My Program Rules Semester Course (elective)</td>
<td>VCE Units 1 &amp; 2 Computing (Year 10 Acceleration option)</td>
<td>VCE Units 3 &amp; 4 Informatics (recommended completion of units 1 &amp; 2)</td>
<td>Database administrator, health information manager, IT educator, system analyst, system designer, website administrator, website developer.</td>
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<tr>
<td>Year 8 Digital Technologies (compulsory)</td>
<td>Year 9 Creative Stream Creative IT Semester Course (elective)</td>
<td></td>
<td>VET (2 Year course) Certificate III Information, Digital Media &amp; Technology - Game Programming (full completion)</td>
<td>Network administrator, network technician, programmer, software engineer, system administrator, system analyst, system designer, website developer.</td>
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<td></td>
<td>Year 10 Programming Stream 2D Game Development Semester Course (elective)</td>
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<td>Year 10 Creative Stream Creative IT Semester Course (elective)</td>
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<td>Year 10 Business Stream Business IT Semester Course (elective)</td>
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<td>VET Certificate II Business Administration (full completion)</td>
<td>VET Certificate III Business Administration (partial Completion)</td>
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<td>Accounts clerk, administration assistant, bank officer, call centre operator, human resources officer, receptionist.</td>
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<tr>
<td></td>
<td>Year 10 Business Stream Business IT Semester Course (elective)</td>
<td></td>
<td>VET (2 Year course) Certificate III Information, Digital Media &amp; Technology - Game Programming (full completion)</td>
<td>Computer programmer, game designer, game tester, 3D game engine developer, multimedia creator, interactive-technology creator.</td>
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