



Area of Study

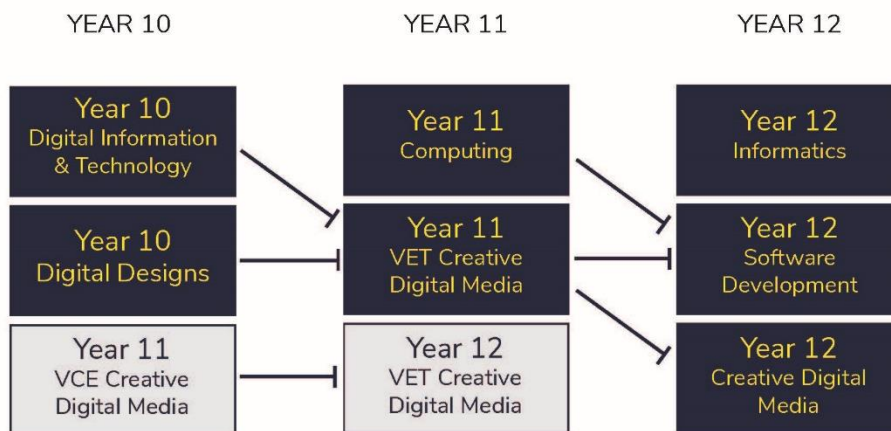
Digital Technologies

2019 Handbook

Contents

Pathway Information	3
Year 10 Curriculum	4
Digital Technologies - Design	4
Digital Technologies – Information Technology	5
VCE Curriculum	6
Computing Unit 1	6
Computing Unit 2	7
Software Development Units 3 & 4	8
Informatics Units 3 & 4	9

Pathway Information



Year 10 Curriculum

Digital Technologies - Design

Semester: Semester 1 or 2

Teacher: [Mr Louk](#)

Recommended Previous Studies:

No Prerequisite

Course Content:

The year 10 Digital Designs course focuses on the digital design process with a strong emphasis on practical skills involving, page layout, vector design, image manipulation, animation, and website development. Students who are keen to develop skills for the digital media and design industry or are looking at the VET Certificate III in Interactive Digital Media would find this course beneficial.

Students are introduced to a variety of software including; InDesign, Illustrator, Photoshop, Animate, Dreamweaver, Fusion360 and Flash. Through this software they will gain skills in manipulating, composing and enhancing still images and using these common techniques to create a portfolio of images for advertising or propaganda. Students will also design, draw and animate their own animation sequences. This will involve the use of some basic frame-by-frame animating techniques along with some more technical forms of animating found within the software.

To display the semester's work the above items will be combined into a website folio.

This unit is a skill based course with a focus on the basics of the computer software and the compiling of these items combined into a digital folio/website.

Assessed Coursework:

Students will be assessed through the completion of the following:

- Photoshop Assessment Task
- Website folio
- Animation Assessment Task
- 3D Modelling Task
- Examination

Digital Technologies – Information Technology

Semester: Semester 1 or 2
Teacher: [Mr Zhu](#)

Recommended Previous Studies:

No Prerequisite

Course Content:

The Information Technology course enables students to become confident and creative developers of digital solutions through the application of information systems and specific ways of thinking about problem solving.

Students acquire a deep knowledge and understanding of digital systems, data and information and the processes associated with creating digital solutions so they can take up an active role in meeting current and future needs.

Students will complete a number of practical project tasks that will lead into year 11 and 12 VCE Informatics. This course includes an introduction to programming, information design, programming, and computer hardware and software components.

Assessed Coursework:

Students will be assessed through the completion of the following:

- Range of practical assessment tasks
- Exam

VCE Curriculum

Computing Unit 1

Semester: Semester 1

Teacher: [Mr Wright](#)

Recommended Previous Studies:

No prerequisite

Course Content:

In this Unit students focus on how data, information and networked digital systems can be used to meet a range of users' current and future needs.

In Area of Study 1 students collect primary data when investigating an issue, practice or event and create a digital solution that graphically presents the findings of the investigation.

In Area of Study 2 students examine the technical underpinnings of wireless and mobile networks, and security controls to protect stored and transmitted data, to design a network solution that meets an identified need or opportunity. They predict the impact on users if the network solution were implemented.

In Area of Study 3 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.

When creating solutions students need to apply relevant stages of the problem-solving methodology as well as computational, design and systems thinking skills.

Assessed Coursework:

In this Unit, student progress will be monitored and assessed through the use of:

- 3 major assessment tasks
- End of semester exam

Computing Unit 2

Semester: Semester 2
Teacher: [Mr Wright](#)

Recommended Previous Studies:

No prerequisite

Course Content:

In this Unit students focus on data and how the application of computational, design and systems thinking skills support the creation of solutions that automate the processing of data.

In Area of Study 1 students develop their computational thinking skills when using a programming or scripting language to create solutions. They engage in the design and development stages of the problem-solving methodology.

In Area of Study 2 students 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 that are clear, usable and attractive, and reduce the complexity of data.

In Area of Study 3 students apply all stages of the problem-solving methodology to create a solution using database management software and explain how they are personally affected by their interactions with a database system.

Assessed Coursework:

In this unit, student progress will be monitored and assessed through the use of:

- 3 Major Assessment Tasks
- End of semester examination

Additional Information:

This unit can be undertaken without completing Unit 1.

Software Development Units 3 & 4

Semester: Semesters 1 & 2
Teacher: [Mr Wilkie](#)

Recommended Previous Studies:

No prerequisite

Course Content:

In Software development Units 3 and 4 students focus on the application of a problem-solving methodology and underlying skills to create purpose-designed solutions using a programming language.

In Unit 3 students develop a detailed understanding of the analysis, design and development stages of the problem-solving methodology and use a programming language to create working software modules.

In Area of Study 1 students respond to given software designs and develop a set of working modules through the use of a programming language. Students examine a range of software design representations and interpret these when applying specific functions of a programming language to create working modules. In Area of Study 2 students analyse a need or opportunity, plan and design a solution and develop computational, design and systems thinking skills. This forms the first part of a project that is completed in Unit 4.

In Unit 4 students focus on how the information needs of individuals and organisations are met through the creation of software solutions used in a networked environment. They continue to study the programming language used in Unit 3.

In Area of Study 1 students further their computational thinking skills by transforming their detailed design prepared in Unit 3 into a software solution. They evaluate the efficiency and effectiveness of the solution in meeting needs or opportunities. They also assess the effectiveness of the project plan in monitoring project progress. In Area of Study 2 students apply systems thinking skills when explaining the relationship between two information systems that share data and how that dependency affects the performance of the systems.

Assessed Coursework:

In these Units, student progress will be monitored and assessed through the use of:

- 1 SAC per Unit.
- 1 SAT which is assessed in 2 parts; with 1 part being in each Unit
- End of year exam

Informatics Units 3 & 4

Semester: Semesters 1 & 2
Teacher: [Mr Wright](#)

Recommended Previous Studies:

No prerequisite

Course Content:

In Informatics Unit 3 and 4 students focus on data, information and information systems.

Unit 3 students consider data and how it is acquired, managed, manipulated and interpreted to meet a range of needs. In Area of Study 1 students investigate the way organisations acquire data using interactive online solutions, such as websites and applications (apps), and consider how users interact with these solutions when conducting online transactions. They examine how relational database management systems (RDBMS) store and manipulate data typically acquired this way. Students use software to create user flow 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. Students develop an understanding of the power and risks of using complex data as a basis for decision making.

In Area of Study 2 students complete the first part of a project. They frame a hypothesis and then select, acquire and organise data from multiple data sets to confirm or refute this hypothesis. This data is manipulated using tools such as spreadsheets or databases to help analyse and interpret it so that students can form a conclusion regarding their hypothesis. Students take an organised approach to problem solving by preparing project plans and monitoring the progress of the project. The second part of the project is completed in Unit 4.

In Unit 4 students focus on strategies and techniques for manipulating, managing and securing data and information to meet a range of needs. In Area of Study 1 students draw on the analysis and conclusion of their hypothesis determined in Unit 3, Outcome 2, and then design, develop and evaluate a multimodal, online solution that effectively communicates the conclusion and findings. The evaluation focuses on the effectiveness of the solution in communicating the conclusion and the reasonableness of the findings. Students use their project plan to monitor their progress and assess the effectiveness of their plan and adjustments in managing the project.

In Area of Study 2, students explore how different organisations manage the storage and disposal of data and information to minimise threats to the integrity and security of data and information and to optimise the handling of information.

Assessed Coursework:

In these Units, student progress will be monitored and assessed through the use of:

- 1 SAC per Unit.
- 1 SAT which is assessed in 2 parts; with 1 part being in each Unit
- End of year exam