**Unit 1 Computing Course**

Unit 1 timeline for 16 weeks indicating the sequence of key knowledge and key skills. Note that while the content is provided sequentially, there is a continuing theme throughout the program.

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|  **Area of Study 1: Data and graphic solutions** |
| **Week** | **Key Knowledge** | **Key Skills** |
| **1** | **Data and information*** types and purposes of qualitative and quantitative data
* sources of, and methods and techniques for, acquiring and referencing primary data and information
* factors affecting the quality of data and information such as relevance, accuracy, bias and reliability
* techniques for authorising the collection and use of data and information such as using consent forms
* techniques for protecting the privacy of the providers of data and information such as de-identifying personal data
 | * identify, legally and ethically acquire, and reference data and information from primary sources
* devise and implement controls and techniques to minimise risks to the security and privacy of data and information
* interpret selected data, identifying relationships and patterns
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| **2** | **Digital systems*** physical and software controls used to protect the security of stored data such as backing up, usernames and passwords, systems protection software and encryption
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| **3** | **Interactions and impact*** Australian Privacy Principles relating to the acquisition, management and communication of data and information, including non-identification of individuals (principle 2), information only being held for its primary purpose (principle 6)
* ethical dilemmas arising from data acquisition strategies
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| **4** | **Approaches to problem solving*** types of graphic solutions suitable for educating, persuading and informing audiences
* design tools for representing the functionality and appearance of graphic solutions such as input-process-output charts (functionality) and annotated diagrams/mock ups (appearance)
* formats and conventions suitable for graphic solutions such as titles, text styles, shapes, lines and arrows, sources of data and legend, colours and contrasts
* software functions and techniques for efficiently and effectively manipulating data to develop graphic solutions, and for validating data
* techniques for testing graphic solutions.
 | * frame an investigation inquiry
* select and apply appropriate design tools to represent the functionality and appearance of graphic solutions for particular purposes
* use software, and select and apply functions, formats, conventions, data validation and testing techniques to efficiently manipulate data and create graphic solutions.
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| **5** | **Outcome 1: Assessment task** |    |

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| **Area of Study 2: Networks** |
| **Week** | **Key Knowledge** | **Key Skills** |
| **6** | **Digital systems*** applications and capabilities of Local Area Networks (LANs) and Wide Area Networks (WANs)
* functions and characteristics of key hardware and software components of networks required for communicating and storing data and information
* purposes of network protocols
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| **7** | **Digital systems*** strengths and limitations of wireless communications technology, measured in terms of data transfer rate, data storage options, cost, security and reliability
* types, capabilities and limitations of mobile devices connected to networks
* security threats to data and information communicated and stored within networks
* technical underpinnings of malware that intentionally threaten the security of networks
 | * describe the capabilities of different networks and wireless communications technology
* compare the capabilities of a range of network components to support the communication and storage of data and information
* apply design thinking skills when configuring a network solution with wireless capability, taking into account how data and information are transmitted and secured
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| **8** | **Interactions and impact*** ways in which people, processes, digital systems and data combine to form networked information systems
* legal requirements and ethical responsibilities of network professionals and users of networks with respect to social protocols and the ownership of data and information
* risks and benefits of using networks in a global environment.
 | * apply systems thinking skills to predict risks and benefits of the implementation of a new or modified network solution with wireless capability for the users.
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| **9** | **Outcome 2: Assessment task** |    |

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| **Area of Study 3: Collaboration and communication** |
| **Week** | **Key Knowledge** | **Key Skills** |
| **10** | **Interactions and impact*** applications of information systems in a range of settings
* a detailed study in a particular field such as entertainment, agriculture, finance, sport, health
* ways in which end-users can express opinions on websites about how information systems are used for particular purposes such as writing a review in a text box and a rating system
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| **11** | **Data and information*** sources of, and methods and techniques for, acquiring and referencing primary data and secondary data and information
* factors affecting the integrity of data, such as correctness, reasonableness and accuracy
 | * select and apply appropriate methods and techniques to acquire and reference data and information
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| **12** | **Digital systems*** advantages and disadvantages of using cloud solutions, and using cloud computing for storing, communicating and disposing of data and information
* impact of growth of mobile devices on website design
 | * use digital systems to document and monitor project plans when creating team solutions
* evaluate cloud computing as a data storage solution
* select and use digital system components appropriate to a team’s needs
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| **13** | **Approaches to problem solving*** visualising thinking tools and techniques for supporting reasoning and decision making when analysing issues and ethical dilemmas
* key principles of information architecture
* characteristics of effective user interfaces for mobile devices, for example useability, accessibility, tolerance, visibility, legibility, consistency, affordance
* design principles that influence the appearance of websites
* design tools and techniques for representing websites
 | * use digital systems to document and monitor project plans when creating team solutions
* analyse the causes and effects of issues using visualising thinking tools
* select appropriate design tools and represent the appearance and functionality of solutions, taking into account user interactions
* recommend online techniques for encouraging end-users’ support of published viewpoints
* use web authoring software and select and apply functions and techniques to manipulate data and create solutions.
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| **14** | **Approaches to problem solving*** formats and conventions suitable for websites
* software functions and techniques for manipulating and validating data, and testing websites
* tools and techniques for coordinating the tasks, people, digital systems resources and time required to create solutions.
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| **15** | **Outcome 3: Assessment task** |    |
| **16** | **Outcome 3: Assessment task** |    |