**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.

|  |  |  |
| --- | --- | --- |
| **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 |
| **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 |  |
| **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 |  |
| **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. |
| **5** | **Outcome 1: Assessment task** |  |

|  |  |  |
| --- | --- | --- |
| **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 |  |
| **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 |
| **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. |
| **9** | **Outcome 2: Assessment task** |  |

|  |  |  |
| --- | --- | --- |
| **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 |  |
| **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 |
| **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 |
| **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. |
| **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. |  |
| **15** | **Outcome 3: Assessment task** |  |
| **16** | **Outcome 3: Assessment task** |  |