VCE Applied Computing 2025–2028

Video 5

Background to Unit 2 Outcome 2

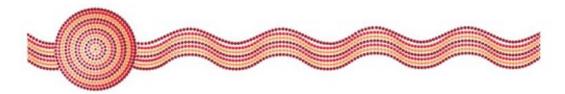
Applied Computing





Acknowledgement of Country

The VCAA respectfully acknowledges the Traditional Owners of Country throughout Victoria and pays respect to the ongoing living cultures of First Peoples.







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Video 5

Background to Unit 2 Outcome 2

Applied Computing





Purpose of this presentation

- Overview of Unit 2 Outcome 2 Applied Computing
- Major changes to Unit 2 Outcome 2
- Outcome statement
- Key knowledge
- Key skills
- Assessment tasks



Unit 2 Outcome 2





Changes to Unit 2 Outcome 2

- Cyber security incident
- Emerging trends/AI
- Cryptography
- Frameworks
- Updated assessment tasks



Unit 2 Outcome 2

From the outcome statement

 Respond to a teacher-provided case study to examine a cyber security incident or a network vulnerability, evaluate the threats to a network, and propose strategies to protect the security of data and information on the network.



- emerging trends in cyber security, such as:
 - security measures (multi-factor authentication)
 - regulatory compliance
 - artificial intelligence-based (AI) threat detection
 - Zero Trust Architecture
 - use of cryptography for protection strategies



- functions and characteristics of key hardware and software components of networks required for communicating and storing data and information, such as:
 - routers for connecting multiple networks
 - switches for connecting multiple devices in a network
 - firewalls for monitoring and controlling incoming and outgoing network traffic
 - data storage and backup systems
 - network security software (firewall software, antivirus software, Darktrace AI) for protecting networks from threats and vulnerabilities
 - technical underpinnings of intrusion detection systems (IDS) and intrusion prevention systems (IPS)





- strengths and limitations of wired, wireless and mobile communications technology, measured in terms of:
 - cost
 - data storage options
 - reliability
 - security
- technical underpinnings of intranets, the internet and virtual private networks
- applications and capabilities of Local Area Networks (LANs), Wide Area Networks (WANs) and Wireless Personal Area Networks (WPANs)





- risks of using networks in a global environment, such as:
 - cyber security threats
 - data privacy
 - legal compliance
 - unauthorised network access
- technical underpinnings of malware that can intentionally threaten the security of networks, such as:
 - spyware
 - viruses
 - worms
 - ransomware





- security threats to data and information on networks, such as:
 - denial of service attacks
 - improper credential management
 - malicious software
 - outdated versions of software
 - weak passwords



- practices for reducing risks and mitigating threats to networks, such as:
 - application of firmware
 - multifactor authentication
 - backup strategies
 - operating system updates
 - software malware updates
 - staff procedures





- cryptographic techniques to protect data and networks, such as:
 - ciphers (Caesar cipher, Vigenère cipher, polyalphabetic cipher)
 - symmetric encryption (AES)
 - asymmetric encryption (ECDH, ECDSA, RSA)
- emergence of artificial intelligence in providing network security mechanisms, such as:
 - machine learning algorithms that analyse network traffic patterns
 - provision of real-time monitoring and notification





- the role of ethical hacking, such as identifying vulnerabilities and weaknesses in networks
- key legislation and industry frameworks that affect how organisations ethically control the security and communication of data and information:
 - Essential Eight
 - Health Records Act 2001 (HPP 2, 4, 5)
 - Information Security Manual (ISM) (Guidelines for Networking: Encryption;
 Segmentation and segregation; Network access controls; Confidentiality and integrity of wireless network traffic; Wireless network footprint)
 - Privacy Act 1988 (Cwlth) (APP 1, 6, 11)
 - Privacy and Data Protection Act 2014 (IPP 2, 4, 5).





Unit 2 Outcome 2 – Key skills

- identify and examine a cyber security incident or a network vulnerability
- identify and describe the key components of networks
- describe the capabilities of different networks
- identify and evaluate the impact of network vulnerabilities and threats to the security of data and information
- identify and discuss possible legal and ethical issues arising from ineffective security strategies
- propose and justify strategies to protect the security of data and information within a network.





Unit 2 Outcome 2 – Assessment task

Suitable tasks for assessment in this unit may be selected from the following:

- A teacher-provided case study with structured questions that investigates a cyber security incident and how it could be prevented in the future.
- A teacher-provided case study with structured questions that investigates a network, its vulnerabilities and how these could be mitigated.



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