Unit Outline (Higher Education)

Institute / School: Institute of Innovation, Science & Sustainability

Unit Title: Cybersecurity Fundamentals

Unit ID: ITECH1502

Credit Points: 15.00

Prerequisite(s): Nil

Co-requisite(s): Nil

Exclusion(s): (GPSIT1102 and ITECH1102)

ASCED: 020113

Description of the Unit:

This unit introduces students to the foundational concepts and practices in cybersecurity. It emphasizes the understanding and application of core principles in securing systems and networks against threats. The unit prepares students for further studies in cybersecurity, and is tailored to those new to the field, focusing on building a solid theoretical and practical foundation.

Grade Scheme: Graded (HD, D, C, P, MF, F, XF)

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the Unit but gained a final mark of 45 per cent or above, has completed all major assessment tasks (including all sub-components where a task has multiple parts) as specified in the Unit Description and is not eligible for any other form of supplementary assessment

Course Level:

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Introductory			✔			

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Intermediate						
Advanced						

Learning Outcomes:

After successfully completing this unit, students should be able to:

Knowledge:

K1. Describe the basic concepts and terminology of cybersecurity.
K2. Identify common cybersecurity threats and vulnerabilities.
K3. Explain the function and purpose of various security technologies and practices.
K4. Recognize legal and ethical issues in the context of cybersecurity.

Skills:

S1. Assess risks associated with cybersecurity in personal and organizational contexts.
S2. Apply basic security measures to protect systems and data.
S3. Utilize tools for vulnerability scanning and basic penetration testing.
S4. Implement simple security protocols on personal and small-scale networks.

Application of knowledge and skills:

A1. Apply cybersecurity measures to real-world scenarios.
A2. Analyze case studies to identify security breaches and suggest mitigation strategies.

Unit Content:

Topics may include:

- Understanding Cyber Threats, Vulnerabilities, and Attacks.
- Basic Cryptography: Concepts, Tools, and Techniques.
- Implementing Network Security: Firewalls, VPNs, and Wireless Security.
- Practical Security: Securing Devices and Using Security Software.
- Legal, Privacy, and Ethical Issues in Cybersecurity.
- Incident Response and Basic Forensic Techniques.
- Introduction to Security in Emerging Technologies: IoT and Cloud Security and software security.
- Introduction to Local Area Networks (LAN), LAN components, Ethernet and Token Ring, LAN design consideration, Wireless LAN, Wide Area Networks (WAN).
- Security requirments, including confidentiality, integrity and availability.
- Security threats to Enterprise Networks.

FEDTASKS

Federation University Federation recognises that students require key transferable employability skills to

prepare them for their future workplace and society. FEDTASKS (**T**ransferable **A**ttributes **S**kills and **K**nowledge) provide a targeted focus on five key transferable Attributes, Skills, and Knowledge that are be embedded within curriculum, developed gradually towards successful measures and interlinked with cross-discipline and Co-operative Learning opportunities. *One or more FEDTASK, transferable Attributes, Skills or Knowledge must be evident in the specified learning outcomes and assessment for each FedUni Unit, and all must be directly assessed in each Course.*

FEDTASK attribute and descriptor		**Development and acquisition of FEDTASKS in the Unit**	
		Learning Outcomes (KSA)	**Assessment task (AT#)**
FEDTASK 1 Interpersonal	Students will demonstrate the ability to effectively communicate, inter-act and work with others both individually and in groups. Students will be required to display skills in-person and/or online in: • Using effective verbal and non-verbal communication • Listening for meaning and influencing via active listening • Showing empathy for others • Negotiating and demonstrating conflict resolution skills • Working respectfully in cross-cultural and diverse teams.	K3, K4	AT1, AT2, AT3
FEDTASK 2 Leadership	Students will demonstrate the ability to apply professional skills and behaviours in leading others. Students will be required to display skills in: • Creating a collegial environment • Showing self -awareness and the ability to self-reflect • Inspiring and convincing others • Making informed decisions • Displaying initiative	Not applicable	Not applicable
FEDTASK 3 Critical Thinking and Creativity	Students will demonstrate an ability to work in complexity and ambiguity using the imagination to create new ideas. Students will be required to display skills in: • Reflecting critically • Evaluating ideas, concepts and information • Considering alternative perspectives to refine ideas • Challenging conventional thinking to clarify concepts • Forming creative solutions in problem solving.	K1, K2, K3, K2, S3, S4	AT1, AT2, AT3

FEDTASK attribute and descriptor		Development and acquisition of FEDTASKS in the Unit	
		Learning Outcomes (KSA)	Assessment task (AT#)
FEDTASK 4 Digital Literacy	Students will demonstrate the ability to work fluently across a range of tools, platforms and applications to achieve a range of tasks. Students will be required to display skills in: • Finding, evaluating, managing, curating, organising and sharing digital information • Collating, managing, accessing and using digital data securely • Receiving and responding to messages in a range of digital media • Contributing actively to digital teams and working groups • Participating in and benefiting from digital learning opportunities.	K4, S1, A2	AT1, AT2, AT3
FEDTASK 5 Sustainable and Ethical Mindset	Students will demonstrate the ability to consider and assess the consequences and impact of ideas and actions in enacting ethical and sustainable decisions. Students will be required to display skills in: • Making informed judgments that consider the impact of devising solutions in global economic environmental and societal contexts • Committing to social responsibility as a professional and a citizen • Evaluating ethical, socially responsible and/or sustainable challenges and generating and articulating responses • Embracing lifelong, life-wide and life-deep learning to be open to diverse others • Implementing required actions to foster sustainability in their professional and personal life.	S1	AT1, AT2, AT3

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1 – K4, S1 – S4, A1 - A2	Students will be tested on their theoretical and knowledge and apply their understanding to practical cybersecurity scenarios.	Assignments and laboratory tasks	20% - 30%
K1, K2, K4, S1, S2, S3, A1, A2	Students will create an artefact that proposes a solution to an authentic cybersecurity issue and present their findings.	Assignment(s) and Presentation(s)	30% - 50%
K1 – K4, S1, S2, A2	Students will be tested on their conceptual understanding of essential terminology and concepts related to cybersecurity	Examination(s)/Test(s)	30% - 40%

Adopted Reference Style:

APA

Refer to the library website for more information

Fed Cite - referencing tool