Course Outline (Higher Education)

School: School of Engineering, Information Technology and Physical Sciences

Course Title: INFORMATION SECURITY

Course ID: ITECH3215

Credit Points: 15.00

Prerequisite(s): (ITECH1002 or ITECH1102)

Co-requisite(s): Nil

Exclusion(s): Nil

ASCED: 029901

Description of the Course:

This course extends students depth of knowledge and skills in information security. This course is designed to provide students with the knowledge and skills to identify risk and develop appropriate strategies to mitigate risk. Students also study information security technologies e.g. symmetric and asymmetric encryption, fire wall, application security, intrusion detection and malicious software to technical responses to protect information systems. Students also study government/legal responses to safeguard information assets and ethical practises to work in Cyber security industry.

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 course but gained a final mark of 45 per cent or above and submitted all major assessment tasks.

Program Level:

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Introductory						

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Intermediate						
Advanced			✔			

Learning Outcomes:

Knowledge:

K1. Describe and explain the natures of attacks on communications infrastructure technology behind public and private data networks that are available to business.

K2. Explain the model of security architecture in terms of security services and mechanisms in safe guarding the information systems.

K3. Identify the technical, policy and legal responses surrounding the implementation of corporate networks and the technology underpinning electronic security solutions.

K4. Illustrate the role of intrusion detection in ensuring the security of the enterprise private data.

Skills:

S1. Analyse and investigate security programs, policies, procedures, standards and guidelines appropriate for corporate environments.

S2. Design awareness training and education programs.

S3. Identify common threats to applications, systems and networks.

S4. Analyse and manage risk in enterprise systems and networks and operate test plans for contingencies and disasters.

Application of knowledge and skills:

A1. Apply the knowledge of security policies to protect privacy of data.

A2. Plan and implement operational assurance programs, including auditing.

A3. Analyse appropriate cryptographic controls for typical use cases.

Course Content:

This course introduces students to aspects of information security. This course is designed to provide students with the necessary background and knowledge to identify risk and develop appropriate countermeasures. Students will cover conceptual material and real-world case studies in lectures, and develop hands-on skills in lab sessions, which may include mainframe security.

Topics may include:

- Significance of information system.
- Threats to the enterprise network.
- Common security countermeasures.
- Cryptography.

- Planning and implementing a corporate security policy.
- Network security technologies.
- Security fundamentals, including confidentiality, integrity and availability.
- Role of fire wall in securing access to corporate networks.
- Application level security.
- Intrusion detection and Malicious software.
- Government and legal responses for information security.

Values:

V1. Appreciate the privacy issues relating to electronic storage of data.

Graduate Attributes

The Federation University FedUni graduate attributes (GA) are entrenched in the Higher Education Graduate Attributes Policy (LT1228). FedUni graduates develop these graduate attributes through their engagement in explicit learning and teaching and assessment tasks that are embedded in all FedUni programs. Graduate attribute attainment typically follows an incremental development process mapped through program progression. **One or more graduate attributes must be evident in the specified learning outcomes and assessment for each FedUni course, and all attributes must be directly assessed in each program**

Graduate attribute and descriptor		**Development and acquisition of GAs in the course**	
		Learning Outcomes (KSA)	**Assessment task (AT#)**
GA 1 Thinkers	Our graduates are curious, reflective and critical. Able to analyse the world in a way that generates valued insights, they are change makers seeking and creating new solutions.	K1, K3, S1, S3, A3	AT1, AT2
GA 2 Innovators	Our graduates have ideas and are able to realise their dreams. They think and act creatively to achieve and inspire positive change.	S2, A1, A2	AT1, AT2
GA 3 Citizens	Our graduates engage in socially and culturally appropriate ways to advance individual, community and global well-being. They are socially and environmentally aware, acting ethically, equitably and compassionately.	K3, S2, A2	AT1, AT2
GA 4 Communicators	Our graduates create, exchange, impart and convey information, ideas, and concepts effectively. They are respectful, inclusive and empathetic towards their audience, and express thoughts, feelings and information in ways that help others to understand.	S2, A2, K4	AT1, AT2

Graduate attribute and descriptor		Development and acquisition of GAs in the course	
		Learning Outcomes (KSA)	Assessment task (AT#)
GA 5 Leaders	Our graduates display and promote positive behaviours, and aspire to make a difference. They act with integrity, are receptive to alternatives and foster sustainable and resilient practices.	K4, S2, A2	AT1, AT2

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1 - K4, S1 - S4, A1, A2, A3.	Assessment tasks will help the development of analysis skills and foster the practical application of course content.	Assignments, presentations and/or completion of laboratory exercises	70 - 80%
K1 - K4, S1 - S4, A1, A2, A3	Students will provide theoretical answers and provide practical solutions to a range of questions and problem types drawn from theory, laboratory tasks and examples used during this course. Students may also be required to deliver presentations.	Examination, Tests, Presentations.	20 - 30%

Adopted Reference Style:

APA

Refer to the library website for more information

Fed Cite - referencing tool