Unit Outline (Higher Education)

Institute / School:	Institute of Innovation, Science & Sustainability
Unit Title:	NETWORK OPERATING SYSTEMS AND AWS CLOUD
Unit ID:	ITECH7624
Credit Points:	15.00
Prerequisite(s):	Nil
Co-requisite(s):	Nil
Exclusion(s):	Nil
ASCED:	020115

Description of the Unit:

This unit is intended for students who seek an overall understanding of IT network systems and cloud computing concepts in relation to cloud-based platforms such as Amazon Web Services (AWS). It provides a detailed overview of cloud concepts, core cloud services, service pricing models, and various cloud-based components related to IT security, architecture, and customer support. As a cybersecurity foundation unit, it is designed for students to study and pass the test for the AWS certification on Cloud Practitioner.

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

Learning Outcomes:

Knowledge:

K1. Describe and discuss system configuration, administration, security, and interoperability between Linux and MS Windows operating systems.

K2. Outline the benefits and operation of the virtualization of operating systems.

K3. Describe the security and compliance measures of the AWS Cloud, including AWS Identity and Access Management (IAM).

K4. Explore key concepts related to routinely monitoring server health, scaling of applications, and resource utilization in the cloud environment such as AWS.

K5. Explain the architectural principles of the AWS Cloud.

Skills:

S1. Administer Linux and Windows Operating systems in the context of security.

S2. Employ virtualization of software and associated operating system in a cloud environment such as AWS.

S3. Create a virtual private cloud (VPC) in a cloud environment such as AWS.

S4. Demonstrate the usage of AWS database services.

S5. Demonstrate the usage of various AWS cloud services including web services, serverless application deployment, and health monitoring.

Application of knowledge and skills:

A1. Establish secure computer networks of disparate systems.

A2. Test and repair network connectivity issues and remotely administer computer systems.

A3. Set up AWS cloud software environment for cyber security experiments.

A4. Utilize AWS core services for cyber security research.

Unit Content:

- Administration and configuration of Windows and Linux operation system
- Cloud computing and AWS cloud concepts
- AWS Cloud Billing: AWS Organizations, AWS Billing & Cost Management, Billing Dashboard
- Technical Support Models
- Amazon Storage: Amazon Elastic Block Store Console Demonstration, AWS S3, AWS S3 Console, AWS
- EFS, AWS EFS Console, AWS S3 Glacier and AWS S3 Glacier Console
- Amazon Database: Amazon RDS, Amazon RDS Consolem Amazon DynamoDB, Amazon Redshift, and
- Amazon Aurora
- AWS Architecture: AWS Global Infrastructure, AWS Services and AWS Management Console
- Cloud Security: AWS Shared Responsibility Model AWS IAM, and AWS IAM Console Demonstration
- Content Delivery: Amazon VPC, VPC Networking
- Automatic Scaling and Monitoring: Elastic Load Balancing, Amazon CloudWatch, Amazon EC2 Auto Scaling

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.	K1, K3 and K5	AT1, AT2
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.	K2, S2 - S5	AT1, AT2

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, S3, A1 - A4	AT1, At2
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.	Not applicable	Not applicable

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1 - K5, S1 - S5, A1- A4	The tasks will develop skills in system configuration and understanding of cloud concepts introduced.	Labs/Assignment(s)	30% - 60%
K1 - K5, S1 - S5, A1 - A4	Participate in lectures and labs/tutorials, read and summarise theoretical and practical aspects of the unit.	Examination(s)/Test(s)	40% - 70%

Adopted Reference Style:

APA

Refer to the library website for more information

Fed Cite - referencing tool