

VAAL UNIVERSITY OF TECHNOLOGY

FACULTY OF ENGINEERING AND TECHNOLOGY

WORKPLACE BASED LEARNING (WBL)

ELECTRICAL ENGINEERING - COMPUTER SYSTEMS



VAAL UNIVERSITY
OF TECHNOLOGY

Inspiring thought. Shaping talent.

TOPIC ASSESSMENT REPORT
WBL 1 (EIEXC1A)

ASSESSOR DECLARATION – ASSESMENT REPORT WBL 1 (EIEXC1A)

STUDENT	INITIALS AND SURNAME:	N NKGODI	
	VUT - STUDENT NUMBER:	221717633	
	ID NUMBER:	0206030311081	
COMPANY:		MOEPI PUBLISHING	
TRAINING PERIOD	WBL: 6 MONTHS	TO	
		START DATE: 01 AUGUST 2025 COMPLETION DATE: 31 JANUARY 2026	
ASSESSOR	INITIALS AND SURNAME:	T MASOEU	
	CELL OR TELEPHONE NUMBER:	0763425352	
	E-MAIL:	TSHIDISO.MASOEU@TEKETE.CO.ZA	
	ASSESSMENT		
ASSESSOR DECLARATION <p>I, the above-mentioned assessor, declare that the above-mentioned student has completed this workplace-based learning module (WBL) of the qualification in the mentioned period under my supervision. The student was found competent in the outcomes as specified in the assessment report. I confirm that graduate attribute 12 was introduced to the student in preparation for the evaluation in the project module.</p> <p>SIGNATURE: <i>TRB. Masoeru</i> DATE: 10 November 2025</p>			
VUT OFFICIAL	FINAL MARK:		
SIGNATURE:		DATE:	

ASSESSMENT REPORT AND TRAINING SCHEDULE WBL 1 (EIEXC1A)

SYLLABUS: ELECTRICAL ENGINEERING - COMPUTER SYSTEMS

TOPIC 1	ORIENTATION / INTRODUCTION				
Company policies, procedures and professional requirements.					
After completion of this topic the student should be able to do the following: <ul style="list-style-type: none"> Understand the policies, procedures and professional of the company as laid down in the orientation program. 					
Start Date: 01 August 2025	End Date: 01 August 2025		Total Hours: 8		
TOPIC MARK (Mark with an X using attached rubric page 19)					
Assessor Signature: <i>TRB. Masoeru</i>		1	2	3	4
Date: 10 November 2025					X
Give a brief description of what was covered under this topic.					
Moepi Publishing conducted our induction/orientation on the 01 of August 2025 at the innovation hub where the company is situated. What was covered was:					
The company's mission, vision and values					
The organisational structure, the team and all the departments in the company					
The organisation policies and procedure which included attendance, code of conduct and our workplace rules, IT policies and also the confidentiality and the organisation data protection					
our job responsibilities and roles, performance expectation, our work schedule and also our reporting lines, the tools, software training and equipment that we were going to use					
Dress code and workplace etiquette, met our team and supervisor					
Tour of the workplace					
We also had a MICT SETA Induction where they covered:					
The role of MICT SETA in education, training, and skills development					
Program structure and learning outcomes					
Responsibilities of the learner which included attendance, participation, assessments, workplace conduct, responsibilities of the employer responsibilities of the training provider					
Career guidance and skills progression opportunities					
Our contracts and agreements					
Student Signature: <i>nnkgodi</i>					Date: 01 August 2025

Mentor Signature:						Date: 10 November 2025					
TOPIC 2						SAFETY AND FIRST AID					
Industrial or Mining safety regulations as applicable, NOSA course and Basic first aid course.											
After completion of this topic the student should be able to do the following: <ul style="list-style-type: none"> • Contribute to the safety, health and environment of the industry as laid down in a safety program. • Demonstrate and comply with relevant OHSACT. • Demonstrate and comply with NOSA safety standards. • Demonstrate the necessary first aid skills. 											
Start Date: 04 August 2025				End Date: 05 August 2025				Total Hours: 16			
TOPIC MARK (Mark with an X using rubric attached page 19) Assessor Signature: <i>TRB. Masoewu</i> Date: 10 November 2025						1	2	3	4 <input checked="" type="checkbox"/>	5	
Give a brief description of what was covered under this topic. In this topic we learned about workplace hazards and how to control risks. Gained knowledge and importance of incident reporting, investigation, and safety audits. Demonstrated fire safety measures, emergency preparedness, and reading hazard signs. Learned to promote a culture of safety, leadership responsibilities, and risk awareness. Understood legal responsibilities under the OHSACT. Learned the basic principles of first aid and the importance of staying calm and alert during emergencies. Understood how to respond safely and appropriately when someone is injured or ill in the workplace. Covered the importance of early response, communication, and seeking professional help when necessary. Made aware of the organisation's fire extinguishers, emergency exits, and first aid kits, and also regular drills that are conducted so we know what to do in case of an emergency We were also provided with the OHS Audit Report that dates back to June 2025											
Student Signature: <i>nwkgodi</i>						Date: 05 August 2025					

Mentor Signature:		Date: 10 November 2025				
TOPIC 3	BASIC HAND SKILLS					
Mechanical / Electrical / Electronic / Computer.						
After completion of this topic the student should be able to do the following as applicable to the discipline: <ul style="list-style-type: none"> Competent use of basic tools and equipment. 						
Start Date: 06 August 2025		End Date: 11 August 2025		Total Hours: 32		
TOPIC MARK (Mark with an X using rubric attached page 19) Assessor Signature: TRB. Masoewu Date: 10 November 2025		1	2	3	4 X	5
Give a brief description of what was covered under this topic.						
We learned how to install and replace components such as RAM, hard drives, SSDs, and power supplies.						
Practiced cleaning and maintaining hardware to prevent damage and ensure optimal performance.						
Developed skills in setting up and configuring peripherals like monitors, keyboards, mice, and printers, as well as basic networking equipment such as routers, switches, and cabling.						
learned to test network connections and run Ethernet or fibre cables efficiently.						
How to utilize essential hand tools, including screwdrivers, pliers, cable testers, crimping tools, and anti-static wrist straps, as well as diagnostic tools like multi-meter s and POST cards for troubleshooting hardware issues.						
Practiced installing operating systems, essential software applications, and performing basic software configuration.						
learned the importance of safety while working with sensitive electronic components, including anti-static precautions and organizing my workspace for efficiency and safety.						
Student Signature: nnekgodi		Date: 11 August 2025				

Mentor Signature:		Date: 10 November 2025				
TOPIC 4	TEST EQUIPMENT					
Basics and the application of test equipment.						
After completion of this topic the student should be able to do the following: <ul style="list-style-type: none"> • Demonstrate the understanding of the basics of test equipment. • Operate computer hardware and software test equipment used in the specific field. 						
Start Date: 12 August 2025		End Date: 13 August 2025		Total Hours: 16		
TOPIC MARK (Mark with an X using attached rubric page 19)						
Assessor Signature:		1	2	3	4	5
Date: 10 November 2025						
Give a brief description of what was covered under this topic.						
How to:						
Create Windows/Linux VMs with hardware and software or network test tools like CPU-Z, HW-Monitor, Wireshark, Nmap, Postman.						
Perform login and diagnostic tasks on the virtual machines.						
run chkdsk and other disk monitoring tools to check for errors, bad sectors, and fragmentation, and documented the results with screenshots or logs.						
Use Task Manager and HW-Monitor, I observed CPU usage, memory usage, and temperatures while performing stress tests by opening multiple applications. I created a report comparing system performance before and after the load.						
use Wireshark to capture network traffic while browsing a website and identifying key elements such as HTTP GET requests and TCP handshakes. Deliverables include exported capture files and screenshots.						
Conduct ping and latency tests; analyse connectivity and packet loss.						
Scan ports with Nmap; summarize open ports and services.						
Configure Azure Monitor alerts						
Run Log Analytics queries to check event logs.						
Set up a managed lab environment where each we get our own machine and Pre-install the required test tools so they only focus on operating them						
use Windows Device Manager to identify missing or malfunctioning drivers. I documented the results with screenshots and explained the role of each driver.						

Use Azure Resource Health tools to check the status of VMs and storage accounts and documented the health reports.						
Student Signature: <i>nunkgodí</i>			Date: 13 August 2025			
Mentor Signature:			Date: 10 November 2025			
TOPIC 5		HARDWARE & SOFTWARE MAINTENANCE				
Computer hardware systems which include Servers, PC's, Laptops, Printers and IoT Devices.						
After completion of this topic the student should be able to display an understanding of: <ul style="list-style-type: none"> • Maintenance procedure, functions and use of the above equipment. • The configure and commission the above computer hardware infrastructure. • Install, update, uninstall and maintain software on clients and servers in a network for both Linux and Windows Operating systems. 						
Start Date: 14 August 2025		End Date: 22 August 2025		Total Hours: 56		
TOPIC MARK (Mark with an X using attached rubric page 19) Assessor Signature: <i>TRB. Masoem</i> Date: 10 November 2025		1	2	3	4 X	5
Give a brief description of what was covered under this topic.						
Hardware maintenance was simulated in Azure. I documented preventive maintenance procedures for physical servers and mapped them to Azure equivalents such as backups, monitoring, and regular updates.						
Gained understanding of how cloud infrastructure replaces physical maintenance tasks through automation and monitoring.						
Explored different Azure Virtual Machine sizes by comparing their CPU, RAM, and storage types to traditional physical hardware components.						
Deployed both Windows Server and Linux Server VMs on Azure.						
Configured Virtual Networks, subnets, and IP addressing to connect both VMs within the same network environment.						
Set up Network Security Groups (NSGs) to allow secure remote access using SSH for Linux and RDP for Windows						
Enabled Azure Monitor and configure alerts to track VM performance, such as CPU and memory usage.						

Installed and configured Windows Server roles including Active Directory, File Server, and IIS Web Server.						
Installed and configured Linux services such as Apache/Nginx web servers, SSH, and MySQL databases.						
Demonstrate software lifecycle management by installing, updating, and uninstalling applications on both operating systems.						
Configured Azure Backup for both Windows and Linux to ensure data protection and recovery.						
Created and managed users and permissions, including Active Directory users and groups on Windows, and Linux users						
Student Signature: <i>nknkgodi</i>			Date: 25 August 2025			
Mentor Signature:			Date: 10 November 2025			
TOPIC 6		NETWORK MAINTENANCE				
Introductory aspects of network maintenance such as cabling and physical infrastructure.						
After completion of this topic the student should be able to demonstrate the ability to: <ul style="list-style-type: none"> • Demonstrate the ability to build and cable network infrastructure. • Demonstrate the ability to configure a heterogenous network, comprising of both Linux and Windows end devices, switches and routers. • Demonstrate the ability to troubleshoot a SOHO to a medium network. 						
Start Date: 25 August 2025		End Date: 28 August 2025		Total Hours: 32		
TOPIC MARK (Mark with an X using attached rubric page 19) Assessor Signature: <i>TRB.MASOEN</i> Date: 10 November 2025		1	2	3	4 X	5
Give a brief description of what was covered under this topic.						
During this task, I worked on designing and configuring a Small Office/Home Office (SOHO) network using Cisco Packet Tracer to simulate a real-world environment similar to our current workspace setup.						
began by creating a network diagram in Packet Tracer showing a Wi-Fi router connected to the internet.						
Two client devices, one running Windows and another running Linux were connected to the router through both wired and wireless connections						

included a cloud object to represent the Internet and Microsoft 365/SharePoint services, simulating cloud access as found in modern workplaces.						
design was then expanded into a small office setup by adding a network switch connected to 4–6 desktop and laptop computers.						
All devices-maintained internet access through the router and could reach cloud applications.						
assigned an IP addressing scheme using the network 192.168.1.0/24, where the router's LAN interface acted as the gateway						
All client devices were configured to obtain IP addresses dynamically through DHCP, which was set up on the router.						
To ensure connectivity, a ping tests was conducted from the PCs to the router and to the simulated Microsoft 365 cloud, confirming that all devices had working internet access.						
tested communication between the Windows and Linux devices through ping and basic file-sharing tests.						
intentionally introduced two network faults, including a wrong IP configuration and a misconnected cable, to simulate real-world issues and used various troubleshooting commands to identify and resolve problems						
identifying the issues, the IP settings was corrected and the cables were reconnected, successfully restoring full connectivity to the network.						
At the end of the task a completed Packet Tracer file showing both the SOHO and extended office network diagrams was presented to the assessor and documentation was submitted						
Student Signature: <i>nwkgo di</i>			Date: 29 August 2025			
Mentor Signature:			Date: 10 November 2025			
TOPIC 7		DATABASE MAINTENANCE				
Database Software						
After completion of this topic the student should be able to: . Install, maintain and administer database software.						
Start Date: 29 August 2025		End Date: 03 September 2025		Total Hours: 32		
TOPIC MARK (Mark with an X using attached rubric page 19) Assessor Signature: <i>TRB.MAsou</i> Date: 10 November 2025		1	2	3	4 X	5

<i>Give a brief description of what was covered under this topic.</i>	
focused on learning how to install, maintain, and administer database software using both MySQL as part of the practical setup. The goal was to understand how databases function within software systems and how to manage them effectively.	
Started by installing MySQL Server on my system to create and manage databases locally. Using MySQL Workbench and I configured the environments and connected them to a project.	
Created new databases and tables, defined data types, and established primary and foreign keys to ensure relational integrity.	
performed basic administrative tasks such as creating, modifying, and deleting databases and users	
granted user privileges and access permissions to control who could read or edit the data	
practiced running SQL queries (SELECT, INSERT, UPDATE, DELETE) to interact with the database and verify that it responded correctly.	
Regular backups were created using SQL export tools to prevent data loss.	
Learned how to perform database maintenance tasks such as checking for data consistency and optimizing tables for better performance.	
Updated and removed outdated records to maintain database.	
<i>Student Signature:</i> <i>nnkgodi</i>	<i>Date: 04 September 2025</i>
<i>Mentor Signature:</i>	<i>Date: 10 November 2025</i>

TOPIC 8	CLOUD COMPUTING	
Virtualisation of resources		
After completion of this topic the student should be able to do the following: <ul style="list-style-type: none">• Have good understanding of cloud technologies and their use cases.• Carry out simple tasks in a cloud environment (software or hardware related)		
Start Date: 04 September 2025	End Date: 05 September 2025	Total Hours: 16

TOPIC MARK (Mark with an X using attached rubric page 19) Assessor Signature: <i>TRB. Masou</i> Date: 10 November 2025	1	2	3	4 X	5
Give a brief description of what was covered under this topic. I gained practical and theoretical understanding of cloud computing concepts and the focus was on learning how cloud environments operate, how virtual machines are managed, and how these technologies are applied in real-world IT infrastructure.					
learned about the main cloud service models:					
<ul style="list-style-type: none"> • Infrastructure as a Service (IaaS) – providing virtualised hardware and network resources. • Platform as a Service (PaaS) – providing platforms for application development and deployment. • Software as a Service (SaaS) – delivering applications over the internet, such as Microsoft 365 and Google Workspace. 					
Explored cloud deployment models, including public, private, hybrid, and community clouds, and how each suits different business needs.					
Studied key characteristics of cloud computing such as on-demand resource access, scalability, elasticity, and cost-effectiveness.					
Understanding how cloud computing supports modern business operations like remote access, data storage, and collaboration.					
Learned that virtualisation allows one physical server to run multiple virtual machines (VMs), each functioning as an independent system.					
Studied hypervisors like Microsoft Hyper-V and VMware, which manage virtual machines and allocate system resources efficiently.					
Practiced observing how virtualisation improves resource utilisation, flexibility, and system recovery during hardware failure.					
Used Microsoft Azure to create and manage Windows and Linux Virtual Machines.					
Configured virtual networks, subnets, and resource groups to simulate a real cloud infrastructure.					
Created Azure storage accounts and practiced uploading and retrieving files from Blob Storage.					
Learned how to scale resources dynamically, add new VMs, and perform snapshot backups for disaster recovery.					
Tested remote connectivity and verified secure access through SSH (Linux) and RDP (Windows).					
Explored cost management tools to understand how pricing works for cloud resources and how to manage usage efficiently.					
Student Signature: <i>nunkodi</i> Date: 05 September 2025					

Mentor Signature:

Date: 10 November 2025

OTHER TOPICS (You can add any topics related to the training)

TOPIC 9	BUSINESS ANALYTICS TOOL				
Power – Bi tool					
After completion of this topic the student should be able to do the following: <ul style="list-style-type: none">• Understand the purpose and importance of business analytics tools in data-driven decision-making.• Create interactive dashboards and reports to communicate insights effectively.• Connect Power BI to different data sources such as Excel, SQL databases, and cloud platforms.• Publish and share reports securely within an organization.					
Start Date: 08 September 2025		End Date: 16 September 2025		Total Hours: 56	
TOPIC MARK (Mark with an X using attached rubric page 19)					
Assessor Signature: <i>TRB.MAsouei</i>		1	2	3	4
Date: 10 November 2025					X ⁵
Give a brief description of what was covered under this topic.					
During this topic, I explored Power BI, a leading business analytics and data visualization tool developed by Microsoft. The goal was to understand how organizations use data to make informed decisions and to develop the skills required to create professional reports and dashboards.					
Learned the role of business analytics in transforming raw data into meaningful insights that support decision-making					
Imported and connected data from Excel spreadsheets, SQL databases, and online sources into Power BI.					
Performed data cleaning using Power Query Editor, including removing duplicates, correcting data types, and transforming columns.					
Created relationships between tables to build a unified data model.					
Used DAX formulas to create calculated columns and measures for advanced analysis.					
Designed interactive dashboards using charts, cards, slicers, and KPIs					
Applied filters, hierarchies, and drill-through features to make reports dynamic and user-friendly					
Customized themes and layouts for better presentation and readability.					
Published reports to the Power BI Service for online access.					

Learned how to Configure workspace access and sharing permissions to ensure data security.	
Explored how organizations use Power BI for real-time monitoring and strategic decision-making	
Student Signature: <i>nnkgodi</i>	Date: <i>15 September 2025</i>
Mentor Signature:	Date: <i>10 November 2025</i>

APENDIX A

GRADUATE ATTRIBUTE(GA)

Note to Assessor and Mentor

ECSA requires that GA12 be evaluated at the end of the WIL training. This GA must be introduced to the student when starting with WBL1 module, developed further in WBL 2 module, and evaluated in WBL 3 (project module). In this module, there is need for proof of how this GA was introduced to the trainee. Below are the descriptions of what this GA entails.

<p>Learning outcome: Demonstrate an understanding of workplace practices to solve engineering problems consistent with academic learning achieved.</p> <ul style="list-style-type: none"> • The balance of investigation and experiment should be appropriate to the discipline. An investigation or experimental study should be typical of those in which the graduate would participate in an employment situation shortly after graduation. 	
Where is the outcome assessed?	In the final Workplace project report.
How is this outcome assessed?	<p>Students must submit a report, validated by a mentor, demonstrating their capability to:</p> <ul style="list-style-type: none"> • Utilize computer engineering principles to develop, construct, and configure systems within the workplace-based learning environment. • Employ computer engineering principles for the design or enhancement of existing systems. • Implement computer engineering principles to innovate or improve processes within the workplace.

	<ul style="list-style-type: none"> • Certainly! Here are additional points that build upon the initial requirements, showcasing a comprehensive application of computer engineering principles in a workplace-based learning setting: • Analyse and evaluate the performance of implemented systems, employing computer engineering principles to identify optimization opportunities and implement effective solutions. • Apply critical thinking and problem-solving skills to troubleshoot and resolve technical issues that arise during the development or operation of systems. • Collaborate effectively with cross-functional teams, using computer engineering principles to communicate technical concepts clearly and contribute to interdisciplinary projects. • Demonstrate an understanding of industry standards and regulatory requirements relevant to computer engineering, ensuring that all projects comply with these guidelines. • Employ computer engineering principles to assess the security implications of systems and processes, implementing robust security measures and protocols to protect organizational data. • Integrate sustainability considerations into system design and development, applying computer engineering principles to promote environmental responsibility and resource efficiency.
What is satisfactory performance?	<p>The student must comply with conducting a proper investigation and experiment to uncover the required information. The student should reflect the following in the report:</p> <ul style="list-style-type: none"> • define the scope, methodology, and literature review, • analyse the results, draw conclusions, provide possible solutions (outcome if experimental), • report on the work in writing, keeping in mind to use appropriate methods/tools. • Include a portion of data/data analysis in the literature review. <p>This graduate attribute is assessed by a comprehensive four (4) level rubric where a minimum set of outcomes must be met to prove competency. The GA assessment is categorised as follow:</p> <ul style="list-style-type: none"> • Poor - student does not comply at all,

	<ul style="list-style-type: none"> • Borderline - may comply with corrections, • Competent - min to moderate compliance is met, • exceed expectation – max compliance is met. <p>All objectives must be achieved with at least the foundational level of adherence as specified by the assessment criteria. This involves a detailed evaluation of the necessity for the project. Computer engineering students must comprehend the critical importance of experimental and project-based work, demonstrating proficiency in planning and executing technology-driven projects. In particular, they are expected to:</p> <ol style="list-style-type: none"> 1. Choose the most appropriate hardware and software tools for conducting research or experimental projects, showcasing the ability to accurately select and utilize the necessary technology with minimal mistakes. 2. Independently set up and conduct experiments or simulations using specified hardware and software, requiring negligible assistance. They demonstrate a significant degree of autonomy in navigating and employing complex computational tools and environments. 3. Analyse, interpret, and draw meaningful insights from data collected during the project. Perform precise calculations or analyses with minor discrepancies. 4. They should also be capable of comparing experimental data with theoretical concepts, acknowledging any discrepancies, measurement inaccuracies, and variables that could influence the outcomes.
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	<p>5. Formulate conclusions based on a thorough analysis of all gathered data. The conclusions should be detailed in a coherent paragraph that encapsulates the project's findings, exhibits a logical flow, and suggests avenues for future research or development.</p> <p>6. Compile the project's objectives, methodology, and findings into a well-organized technical report. Although the report might omit a few negligible details, it should largely reflect the attributes of a comprehensive and professional document, including being properly bound.</p>
<p>What is the consequence of unsatisfactory performance?</p>	<p>Achieving this attribute is a critical requirement for successfully completing Workplace Based Learning. Non-compliance will result in failure, regardless of whether the aggregate score from all summative assessments is a pass. Students who do not satisfy one or more of the criteria will be afforded a second opportunity, within specified deadlines, to fulfil all requirements for the Graduate Attribute (GA). Should a student fail to meet all criteria after this second chance, they will not pass the module, and their record will indicate 'Fail to meet GA 12'.</p>

APENDIX B

WBL 1 RUBRIC

<div> <div>Evaluation Rubric</div> <div>This guideline can be used by the assessor to do student evaluations.</div> </div>								
Rating	Theoretical knowledge	Application of theory	Use of: advanced tools / measuring equipment	Skills integration / Competencies gained	Working speed	Accuracy	Interpersonal relations	Diligence motivation
1 0-19%	Has little knowledge	Cannot apply any theory	Cannot use advanced equipment	Has not integrated any skills	Very slow and does not successfully complete any tasks	Never Accurate	Does not get along with any staff	Does nothing unless instructed
2 20-39%	Can recall some basic knowledge	Can apply some theory with assistance	Can use advanced equipment with assistance	Has integrated some documented skills	Never complete tasks successfully on time	Has to redo and then sometimes accurate	Can interact positively with most of the staff	Does just enough to keep out of trouble
3 40-59%	Knows the basic minimum	Can apply the basic minimum theory	Can use advanced equipment to do the basic minimum	Has integrated the basic minimum documented skills	Just complete tasks successfully and on time	Just meets the minimum specifications	Interact positively with all the staff	Does the minimum expect

4 60-79%	Good knowledge	Can apply high-level theory	Can select and use advanced equipment independently	Effectively integrate skills as needed in practical applications	Normally complete all tasks successfully before/on time	Work is always better than the minimum expected	Is accepted by the staff as somebody with good personal skills	Normally looks for over and above work to do
5 80-100%	Excellent knowledge	Can analyse and synthesise	Optimally select and use advanced equipment	Innovatively integrate all theoretical and practical skills to solve problems	Always complete all tasks successfully before the time	Work is always excellent.	Uses personality to positively influence other staff	Ambitious and eager to prove talents beyond requirements

