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:**	S.E SIBUNDENI
	VUT - STUDENT NUMBER:	223387290
	ID NUMBER:	0310165981088
	COMPANY:	MOEPI PUBLISHING
TRAINING PERIOD	**WBL:**	**TO** ***START DATE: 01/08/2025*** ***COMPLETION DATE:***
ASSESSOR	**INITIALS AND SURNAME:**	T Mosoeu
	CELL OR TELEPHONE NUMBER:	0763425352
	E-MAIL:	tshidiso.mosoeu@tekete.co.za
ASSESSMENT		

ASSESSOR DECLARATION

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.

SIGNATURE: TRB.MAsoeu *DATE:* 10 November 2025

VUT OFFICIAL **FINAL MARK:**	
SIGNATURE:	*DATE:*

ASSESMENT 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:

- Understand the policies, procedures and professional of the company as laid down in the orientation program.

Start Date:01/08/2025	***End Date:01/08/2025***	***Total Hours:8***

TOPIC MARK (Mark with an X using attached rubric page 19)					
Assessor Signature: TRB.MAsoeu ***Date:***10/11/2025	1	2	3	4	X

Give a brief description of what was covered under this topic.

During my orientation at Moepi Publishing, I learned about the company's mission, vision, values and how different departments work together to achieve organizational goals. The session introduced me to the company's policies on attendance, code of conduct, confidentiality and data protection. I also became familiar with workplace rules, dress code, and communication standards. This helped me understand the expectations of professionalism and how to conduct myself in a formal work environment.

I participated in a guided tour of the workplace and met my supervisors and team members, which helped me understand how collaboration takes place between departments. I also attended the MICT SETA induction, where I was briefed on the WIL program outcomes, learning structure and my responsibilities as a trainee. From this, I learned the importance of accountability, teamwork and following procedures to ensure a safe and productive working environment.

In addition, I was trained on the company's IT Policy, which emphasized responsible use of technology, data handling and maintaining security when working with digital systems. I also learned how to use essential software tools such as Microsoft 365, Outlook and Teams for communication and collaboration. Overall, the orientation helped me adapt quickly to the workplace and prepared me to perform my duties confidently and professionally.

Student Signature: S.E Sibundeni ***Date:01/08/2025***

Mentor Signature: ***Date:*** 10/11/2025

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:

- 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:04/08/2025	***End Date:05/08/2025***	***Total Hours:16***

TOPIC MARK (Mark with an X using rubric attached page 19) ***Assessor Signature:*** TRB.MAsoeu ***Date:*** 10/11/2025	1	2	3	4 X	5

Give a brief description of what was covered under this topic.

During my training, I learned about workplace safety regulations and responsibilities under the Occupational Health and Safety Act. I was taught that every employee has the right to a safe working environment and the duty to report any potential hazards. At Moepi Publishing, I observed how the company maintains safety standards through the use of fire extinguishers, marked emergency exits, and accessible first aid kits. I also learned about the importance of having trained first aiders available during emergencies.

I was encouraged to take an active role in keeping the workplace safe by identifying and reporting risks such as loose cables, faulty equipment, or damaged electrical plugs. We reviewed the June 2025 OHS Audit Report, which explained the company's current safety measures and areas for improvement. From this, I learned that safety is a shared responsibility and that teamwork is essential in preventing workplace accidents and ensuring everyone's well-being.

The session also reinforced the importance of following procedures during emergencies and reporting unsafe conditions immediately. Overall, this training taught me to work more responsibly and confidently in a safe and professional manner.

Student Signature: S.E Sibundeni ***Date:05/08/2025***

Mentor Signature:		***Date:*** 10/11/2025				
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: • Competent use of basic tools and equipment.						
Start Date:06/08/2025	***End Date:11/08/2025***		***Total Hours:32***			
TOPIC MARK(Mark with an X using rubric attached page 19) ***Assessor Signature:*** TRB.MAsoou ***Date:*** 10/11/2025			1	2	3	X 4 5

Give a brief description of what was covered under this topic.

During my training, I learned how to check and fix computer hardware problems using different tools. I used Windows Device Manager to find missing or faulty drivers and learned what each device controls. I also used Task Manager and HWMonitor to watch the CPU and memory while running many programs. This helped me understand how to test computer speed and how the system works under pressure.

I also learned how to check hard drives for problems using tools like chkdsk. I looked for errors, bad sectors and other issues that can slow down the computer or cause data loss. From this, I learned how to keep the computer running well and how to stop problems before they happen. These activities helped me understand how to take care of hardware properly and safely.

In addition, I practiced fixing Wi-Fi and projector problems in the office. I checked cables, restarted routers and made sure devices were connected and set up correctly. These tasks helped me become better at solving problems and paying attention to small details. I also learned to work safely and carefully with all equipment. Overall, this training gave me important basic skills I can use for more advanced computer work.

Student Signature: S.E Sibundeni ***Date:11/08/2025***

Mentor Signature: ***Date:*** 10/11/2025

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:

- Demonstrate the understanding of the basics of test equipment.
- Operate computer hardware and software test equipment used in the specific field.

Start Date:12/08/2025	***End Date:13/08/2025***	***Total Hours:16***

TOPIC MARK (Mark with an X using attached rubric page 19) ***Assessor Signature:*** TRB.MAsoeu ***Date:*** 10/11/2025	1	2	3 X	4	5

Give a brief description of what was covered under this topic.

During this part of my training, I learned about the basics of test equipment and how it helps in checking and maintaining computer systems. I was introduced to hardware tools like multimeters, logic analyzers, and POST cards, which are used to measure voltages and signals. I also learned about software tools such as Wireshark, performance monitors, and debugging tools. These helped me understand how to find faults and make sure computers work properly.

I gained practical experience using both hardware and software testing tools in real and virtual environments. I used Device Manager and HWMonitor to check the system's health, find missing drivers and monitor CPU and memory use. I also ran disk checks to find and fix hard drive errors. For network testing, I used Wireshark to capture data packets, Nmap to scan ports and ping and tracert commands to test connection and network speed.

I also learned how to use cloud based tools on Microsoft Azure for monitoring and diagnostics. I set up alerts using Azure Monitor to track CPU usage and checked system logs through Log Analytics. I reviewed the health of virtual machines using Azure Resource Health and saved my work in Azure DevOps as proof of what I did. This training helped me build strong skills in testing, analyzing, and reporting computer system performance.

Student Signature: S.E Sibundeni ***Date:13/08/2025***

Mentor Signature: ***Date:*** 10/11/2025

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:

- 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:14/08/2025	***End Date:22/08/2025***	***Total Hours:56***

TOPIC MARK (Mark with an X using attached rubric page 19)					
Assessor Signature: TRB.MAsoeu ***Date:*** 10/11/2025	1	2	3	X	5

Give a brief description of what was covered under this topic.

During my training, I learned how to maintain and use computer hardware using Azure Virtual Machines. I created Windows and Linux VMs and installed basic software like Office 365, browsers, and security tools. I practiced logging in remotely, managing files, updating systems, and performing backups. I also learned to check CPU, memory, and disk health using tools like HWMonitor and Device Manager. This helped me understand how hardware works and how to detect problems.

I also learned about software maintenance and network tools. I practiced using Wireshark to capture network traffic, ping tests to check connectivity, and Nmap to scan ports. I installed and updated Windows and Linux software, managed user accounts, and set permissions. I learned to use Azure Active Directory for account security and set up alerts for system performance. These tasks taught me how to keep software and networks running safely.

Finally, I practiced using cloud storage and collaboration tools in Azure. I uploaded files to Blob Storage, shared them securely, and organized folders like in OneDrive or SharePoint. I used Azure DevOps to track tasks and collaborate with others, and Azure Lab Services to safely practice hardware and software tasks. I also set up small office networks in Packet Tracer and learned troubleshooting steps. These exercises gave me practical skills in both hardware and software maintenance.

Student Signature: S.E Sibundeni	***Date:22/08/2025***
Mentor Signature:	***Date:*** 10/11/2025

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:

- 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:25/08/2025	***End Date:28/08/2025***	***Total Hours:32***

TOPIC MARK (Mark with an X using attached rubric page 19) ***Assessor Signature:*** TRB.MAsoeu ***Date:*** 10/11/2025	1	2	3	4 X	5

Give a brief description of what was covered under this topic.

During this training, I learned how to design and connect a Small Home Office (SOHO) network using Cisco Packet Tracer. I practiced connecting a Wi-Fi router to the internet and linking multiple devices, including Windows and Linux laptops and desktops. I also learned to extend the network by adding a switch to connect more devices while keeping access to Microsoft 365 and SharePoint cloud services. This helped me understand how small networks work in both home and office environments.

I also learned how to set up IP addresses and configure DHCP so devices get their IP automatically. I configured the router LAN interface as a gateway and made sure all devices could communicate with each other. I practiced testing network connections using ping commands between computers, routers, and cloud services. These exercises improved my understanding of IP management, subnetting, and communication across different operating systems.

Finally, I learned how to troubleshoot and fix network problems. I practiced creating errors like wrong IP addresses or disconnected cables and then used tools like ping, ipconfig, and tracert on Windows, and ping and traceroute on Linux to find the problems. I also used router commands like show ip interface brief to check settings and correct mistakes. These tasks gave me important skills to maintain and restore network functionality in real networks.

Student Signature: S.E Sibundeni ***Date:28/08/2025***

Mentor Signature: ***Date:*** 10/11/2025

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:29/08/2025	***End Date:03/09/2025***	***Total Hours:32***

TOPIC MARK (Mark with an X using attached rubric page 19) ***Assessor Signature:*** TRB.MAsoeu ***Date:*** 10/11/2025	1	2	3	4 X	5

Give a brief description of what was covered under this topic.

During this training, I learned how to install, maintain and manage database software. I practiced setting up and configuring databases to make sure they run smoothly and safely. I also learned how to monitor database performance and reliability. These activities helped me understand the importance of organizing data properly to support daily business operations.

I also learned how to create and manage user accounts and assign permissions to control access. I practiced performing regular backups, optimizing database performance and monitoring resources to prevent data loss. Troubleshooting skills were developed by fixing problems like connection errors, slow queries or storage issues. These exercises showed me how to keep databases secure and reliable.

Finally, I learned how to use databases with Power BI and other tools to analyze and visualize data. This taught me how well-maintained databases help with business decisions. By the end of this training, I gained important skills to maintain, secure, and optimize databases effectively. These skills are essential for managing data in modern IT environments.

Student Signature: S.E Sibundeni ***Date:03/09/2025***

Mentor Signature: ***Date:*** 10/11/2025

TOPIC 8	***CLOUD COMPUTING***
Virtualisation of resources	
After completion of this topic the student should be able to do the following: • Have good understanding of cloud technologies and their use cases. • Carry out simple tasks in a cloud environment (software or hardware related)	

Start Date:04/09/2025	***End Date:05/09/2025***	***Total Hours:16***

TOPIC MARK (Mark with an X using attached rubric page 19) ***Assessor Signature:*** TRB.MAsoou ***Date:*** 10/11/2025	1	2	3	X	5

Give a brief description of what was covered under this topic.

During this training, I learned how to deploy and manage virtual resources using Microsoft Azure. I practiced creating and configuring Windows and Linux Virtual Machines (VMs), setting up Resource Groups, and connecting them through Virtual Networks (VNets) and Subnets. I also learned how to assign IP addresses and use Network Security Groups (NSGs) to keep the virtual environment secure. These tasks helped me understand cloud infrastructure, networking, and access management.

I also learned how to monitor systems and use automation tools in Azure. Using Azure Monitor, I tracked real-time performance and set alerts for high CPU or disk usage. I installed and configured server roles like Active Directory, File Server and Apache, Nginx, or MySQL on Linux. These exercises taught me how to maintain and optimize both Windows and Linux servers in a cloud environment.

Finally, I learned important cloud administration tasks like performing system updates, managing software lifecycles, and creating backups using Azure Backup and Recovery Services Vault. I also practiced creating user accounts, setting permissions, and applying data security policies. By completing this training, I gained skills to deploy, secure, and maintain cloud infrastructures, preparing me for roles in cloud administration and DevOps.

Student Signature: S.E Sibundeni ***Date:05/09/2025***

Mentor Signature: ***Date:*** 10/11/2025

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

TOPIC 10	**POWER BI**
Virtualisation of resources	
After completion of this topic the student should be able to do the following: • Understand how to connect and import data from SQL databases into Power BI using direct queries and data import modes. • Perform data transformation and modelling in Power BI using Power Query to clean, merge, and shape SQL data for analysis. • Integrate Python scripts within Power BI for advanced analytics, automation, and custom visualizations.	
Start Date:08/09/2025	***End Date:16/09/2025*** ***Total Hours:56***

TOPIC MARK (Mark with an X using attached rubric page 19) ***Assessor Signature:*** TRB.MAsoeu ***Date:*** 10/11/2025	1	2	3	4	X 5

Give a brief description of what was covered under this topic.

During this training, I learned how to design and manage data systems using SQL databases and Power BI. I practiced creating structured databases to store information like employee records, leave applications and approvals. I also learned about data normalization, relational modeling, and query optimization to make databases efficient and reliable. These activities helped me understand how data is organized and managed for real applications.

I also learned how to use Power BI for data visualization and analysis. I connected Power BI to SQL databases, created interactive dashboards and used data modeling to interpret performance metrics. I also practiced integrating Python scripts to clean data, make calculations, and create predictive visuals. These exercises taught me how to turn raw data into meaningful insights for decision-making.

Finally, I learned about project development using Scrum principles. I worked in small teams to plan and run project sprints to improve a Leave Management System. Power BI dashboards were used to track progress, monitor productivity, and visualize results. Combining SQL, Python, and Power BI gave me practical skills in data analytics, project management, and teamwork, which are important for modern data-driven work environments.

Student Signature: S.E Sibundeni ***Date:16/09/2025***

Mentor Signature: ***Date:*** 10/11/2025

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.

Learning outcome: Demonstrate an understanding of workplace practices to solve engineering problems consistent with academic learning achieved. • 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?	Students must submit a report, validated by a mentor, demonstrating their capability to: • 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.

	• 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?	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: • 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. 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: • ***Poor*** - student does not comply at all,

	• ***Borderline*** - may comply with corrections, • ***Competent*** - min to moderate compliance is met, • ***exceed expectation*** – max compliance is met. 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: 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.

	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. 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.
What is the consequence of unsatisfactory performance?	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'.

APENDIX B

WBL 1 RUBRIC

Evaluation Rubric	This guideline can be used by the assessor to do student evaluations.							
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 synthesize	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