

## Study Plan

**MDVP Maintenance Technology program at Techcollege,  
Full program: Vocational component (34 weeks) + Personal Growth & Leadership  
(PGL) component (4 weeks)**

**2025-2026**

### Schedule of Activities:

Week	Activities
1	<p><b>PGL component – Start Up: Preliminary training week in Pretoria – 5 days</b>            Module 1: 'Preparing for Denmark' (day 1/3 + day 2/3 + day 3/3)            Module 2: 'Communication and Presentation' (day 1/4)            Module 5: 'The Reflective Learning Approach' (day 1/3)</p>
2	<p><b>Vocational component – 5 days</b>  <b>Module 1: Electrical Installations: Foundations in Electrical Systems (5 days)</b>            Classroom and workshop training in ohms law, light switches, electrical installations, series and parallel circuits and tool and material knowledge.</p>
3	<p><b>Vocational component – 4 days</b>  <b>Module 1: Electrical Installations: Foundations in Electrical Systems (4 days)</b>            Classroom and workshop training in light switches, electrical installations, series and parallel circuits and electrical boards and measuring techniques.  <b>PGL component – 1 day</b>            Module 5: 'The Reflective Learning Approach' (day 2/3)</p>
4	<p><b>Vocational component – 5 days</b>  <b>Module 1: Electrical Installations: Foundations in Electrical Systems (5 days)</b>            Classroom and workshop training in national standards and regulations, technical documentation, troubleshooting and knowledge about circuits breakers and RCD.</p>
5	<p><b>Vocational component – 5 days</b>  <b>Module 1: Electrical Installations: Foundations in Electrical Systems (5 days)</b>            Classroom and workshop training in voltage drop in practice and theory, energy meters, further training in troubleshooting and calculations on combination circuits.</p>
6	<p><b>Vocational component – 4 days</b>  <b>Module 1: Electrical Installations: Foundations in Electrical Systems (1 day)</b>            Round up of the electrical installation subject and dismantling of the electrical installation.  <b>Module 2: Relay Logic/Motor Control: Basics in automatic processes (3 days)</b>            Introduction to relay logic and motor control, classroom and workshop training in components and documentation in relay logic, plus the construction of control panels.  <b>PGL component – 1 day</b>            Module 3: Personal and Professional Values' (day 1/4)</p>

7	<p><b>Vocational component – 5 days</b>  <b>Module 2: Relay Logic/Motor Control: Basics in automatic processes (5 days)</b>            Classroom and workshop training in building and troubleshooting basic relay control systems, understanding technical documentation and the regulations governing these areas.</p>
8	<p><b>Vocational component – 5 days</b>  <b>Module 2: Relay Logic/Motor Control: Basics in automatic processes (5 days)</b>            Classroom and workshop training in understanding the operation and monitoring of automated systems, knowledge about PLC, basic logic and ladder programming, basic sensors and the construction and documentation of PLC based control systems.</p>
9	<p><b>Vocational component – 5 days</b>  <b>Module 2: Relay Logic/Motor Control: Basics in automatic processes (5 days)</b>            Classroom and workshop training in knowledge about PLC, basic logic and ladder programming, basic sensors, the construction and documentation of PLC based control systems, troubleshooting PLC systems and role and functions of transformers.</p>
10	<p><b>Vocational component – 3 days</b>  <b>Module 2: Relay Logic/Motor Control: Basics in automatic processes (1 day)</b>            Classroom training in the function and role of electrical motors.  <b>Module 11: Personal Safety (2 Days)</b>            Instruction in working near or on live installations – 1 day            Rolling and folding scaffolding – 1 day  <b>PGL component – 2 days</b>            Module 4: 'Entrepreneurship' (day 1/4 + day 2/4)</p>
11	<p><b>Vocational component – 5 days</b>  <b>Module 3: Earthing Systems, Ground Fault Protection &amp; Ingress Protection (IP) (5 days)</b>            Classroom and practical training in earthing systems, performing earthing systems (TN/TT), performing equipotential bonding, knowledge about RCD including rules and function, ingress protection.</p>
12	<p><b>Vocational component – 5 days</b>  <b>Module 4: Data Networks (5 days)</b>            Classroom and practical training in data networks, the installation and installing data cables and data connectors. Proper installation practice. Knowledge on IoT, collection of data and data analysis.            Basic knowledge of fiber cables, fiber routing and safety measures.            Knowledge network cable test.</p>
13	<p><b>Vocational component – 4 days</b>  <b>Module 11: Personal Safety (4 days)</b>            First Aid in Vocational Education – 3 days            Firefighting – 1 day  <b>PGL component – 1 day</b>            Module 3: 'Personal and Professional Values' (day 2/4)</p>

14	<p><b>Vocational component – 5 days</b>  <b>Module 12: Water and drainage (5 days)</b>            Classroom and workshop training in documentation, common symbols, knowledge of rules and regulations, knowledge of materials and tools used in plumbing.            Simple measurements and calculations            Installation of water and drainage systems</p>
15	<p><b>Vocational component – 5 days</b>  <b>Module 12: Water and drainage (5 days)</b>            Classroom and workshop training in installation and preparation of operation of water and drainage systems.            Selection of materials.            Knowledge of relevant laws and regulations.            Work safety</p>
16	<p><b>Vocational component – 5 days</b>  <b>Module 12: Water and drainage (5 days)</b>            Classroom and workshop training in measurement methods and measuring tools in connection with marking, assembly, levelling and placement of water and drainage installations.            Operation of water and drainage systems, including repair and maintenance</p>
17	<p><b>Vocational component – 5 days</b>  <b>Module 12: Water and drainage (5 days)</b>            Classroom and workshop training in preparing material and parts lists using material designations, number, quantity and length.            Performing plastic welding on pipe systems that meet applicable standards and quality targets, as well as explain relevant safety and environmental conditions and requirements when performing plastic welding</p>
18	<p><b>Vocational component – 4 days</b>  <b>Module 5: Electrical Installations: Intermediate Level (4 days)</b>            Classroom and workshop training in the installation of electrical meters, service lines and electrical boards, including SPD and RCD.            Knowledge and installation of different socket systems            Installation of 230/400V installation in a simulated commercial and residential building, including special areas.  <b>PGL component – 1 day</b>            Module 5: 'The Reflective Learning Approach' (day 3/3)</p>
19	<p><b>Vocational component – 5 days</b>  <b>Module 5: Electrical Installations: Intermediate Level (5 days)</b>            Classroom and workshop training in the installation of electrical meters, service lines and electrical boards, including SPD and RCD.            Installation of 230/400V installation in a simulated commercial and residential building, including special areas.            Drawing technical documentation, documenting the electrical installation.</p>

20	<p><b>Vocational component – 5 days</b>  <b>Module 5: Electrical Installations: Intermediate Level (5 days)</b>            Installation of 230/400V installation in a simulated commercial and residential building, including special areas.            Troubleshooting and maintenance on electrical installations, including 1,2 and 3-phase appliances.</p>
21	<p><b>Vocational component – 3 days</b>  <b>Module 5: Electrical Installations: Intermediate Level (1 day)</b>            Troubleshooting and maintenance on electrical installations, including 1,2 and 3-phase appliances.  <b>Module 13: Ventilation (2 days)</b>            Classroom and workshop training in the function and workings of ventilations systems and air conditioning.            Rules and regulations concerning ventilation.            Basic drawing techniques.  <b>PGL component – 2 days</b>            Module 4: 'Entrepreneurship' (day 3/4 + day 4/4)</p>
22	<p><b>Vocational component – 5 days</b>  <b>Module 13: Ventilation (5 days)</b>            Classroom and workshop training in in performing and using technical with regard to ventilation.            Measurements of airflow in air conditioning and ventilations systems.            Installation of a simple ventilation system in practice.            Measurements and adjustments of ventilations systems.</p>
23	<p><b>Vocational component – 5 days</b>  <b>Module 6: Relay Logic/Motor Control: Intermediate (5 days)</b>            Classroom and workshop training in performing and modifying documentation for control systems.            Standards and regulations in control systems            Practical assignment – building an automated system with PLC, relay controls and sensors            Selection of components and installation of these.</p>
24	<p><b>Vocational component – 3 days</b>  <b>Module 6: Relay Logic/Motor Control: Intermediate (3 days)</b>            Classroom and workshop training in simple pneumatic systems, how they work, how to install and adjust them.            Practical assignment – building an automated system with PLC, relay controls and sensors  <b>PGL component – 2 days</b>            Module 2: 'Communication and Presentation' (day 2/4 + day 3/4)</p>

25	<p><b>Vocational component – 5 days</b>  <b>Module 6: Relay Logic/Motor Control: Intermediate (5 days)</b>            Classroom and workshop training in system earthing and equipotential bonding in industrial installations and the installation of these.            Practical assignment – building an automated system with PLC, relay controls and sensors            Understanding the role of safety regulations and the connections between the work on the automated systems and the rules            Troubleshooting relay and PLC controls            Operation and monitoring an automated system</p>
26	<p><b>Vocational component – 5 days</b>  <b>Module 6: Relay Logic/Motor Control: Intermediate (5 days)</b>            Classroom and workshop in Troubleshooting relay and PLC controls            Practical assignment – building an automated system with PLC, relay controls and sensors</p>
27	<p><b>Vocational component – 5 days</b>  <b>Module 6: Relay Logic/Motor Control: Intermediate (2 days)</b>            Classroom and workshop in Troubleshooting relay and PLC controls            Practical assignment – building an automated system with PLC, relay controls and sensors            Finishing practical assignment and feedback.  <b>Module 7: Building Automation – Basic HVAC Systems (3 days)</b>            Classroom and workshop training ventilation systems in industrial areas and programming of these.</p>
28	<p><b>Vocational component – 5 days</b>  <b>Module 7: Building Automation – Basic HVAC Systems (3 days)</b>            Practical training in installation and programming of smaller ventilation systems  <b>Module 14: Heat Pumps – Installation and service (2 days)</b>            Classroom training in the knowledge of heat pumps, different kinds of heat pumps, their function and the components within the heat pump.            Knowledge about heat pumps as cooling and heating sources.            Rules and regulations.</p>
29	<p><b>Vocational component – 5 days</b>  <b>Module 14: Heat Pumps – Installation and service (5 days)</b>            Workshop training in the installation, service, testing and adjusting heat pumps.            Practical project: Heat pump installation and maintenance.</p>
30	<p><b>Vocational component – 5 days</b>  <b>Module 14: Heat Pumps – Installation and service (1 day)</b>            Workshop training in the installation, service, testing and adjusting heat pumps.            Practical project: Heat pump installation and maintenance.  <b>Module 8: Customer Service – Internal/External (4 days)</b>            Classroom and case-based training in personal appearance, professional behavior, effective communication, knowledge about customer service.            How to search for and evaluate information</p>

31	<p><b>Vocational component – 4 days</b>  <b>Module 8: Customer Service – Internal/External (1 day)</b>            Classroom and case-based training in information evaluation and communication using correct terminology.  <b>Module 9: Building Automation – Lighting (3 days)</b>            Classroom and workshop training in the installation of IoT devices, data collection and data analysis.            Installation of energy monitoring devices in control panels, electrical boards and machines.            Installation and programming of simple intelligent lighting systems.  <b>PGL component – 1 day</b>            Module 3: 'Personal and professional values' (day 3/4)</p>
32	<p><b>Vocational component – 4 days</b>  <b>Module 9: Building Automation – Lighting (4 days)</b>            Classroom and workshop training in installation and programming of simple intelligent lighting systems.            Troubleshooting, servicing, and maintenance on basic intelligent lighting installations  <b>PGL component – 1 day</b>            Module 3: 'Personal and professional values' (day 4/4)</p>
33	<p><b>Vocational component – 5 days</b>  <b>Module 10: Electrical Grid – Present and the future (5 days)</b>            Classroom and group-based learning about the electrical grid, distribution and transmission, storage of energy and renewable energy sources.            Knowledge about sustainable energy production            Basic knowledge of high-voltage systems.            Report on the electrical grid, renewable energy sources, smart grid and power-to-x.</p>
34	<p><b>Vocational component – 4 days</b>  <b>Module 10: Electrical Grid – Present and the future (4 days)</b>            Classroom and workshop training in the role of transformers, their construction and different types.            Practical project: Installation of a solar PV system or miniature windmill.  <b>PGL component – 1 day</b>            Module 2: 'Communication and Presentation' (day 4/4)</p>
35	<p><b>Vocational component – 5 days</b>  <b>Module 10: Electrical Grid – Present and the future (4 days)</b>            Practical project: Installation of a solar PV system or miniature windmill.            Classroom and workshop training in the regulations and installation of EV charging stations.  <b>Module 15: Capstone Project (1 day)</b>            Introduction to the project and guidance in getting started            Project installation and documentation</p>
36	<p><b>Vocational component – 5 days</b>  <b>Module 15: Capstone Project (5 days)</b>            Introduction to the project and guidance in getting started            Project installation and documentation</p>

37	<p><b>Vocational component – 5 days</b>  <b>Module 15: Capstone Project (5 days)</b>            Project installation and documentation            Troubleshooting</p>
38	<p><b>Vocational component – 3 days</b>  <b>Module 15: Capstone Project (3 days)</b>            Project installation and documentation            Troubleshooting            Oral exam            Class and individual feedback on capstone project.            Feedback on the entire course.            Presentation of diplomas.  <b>PGL component – 2 days</b>            Module 6: 'Final PGL presentation' (day 1/2 + day 2/2)</p>