CVT - CIVIL TECHNOLOGY

CVT 100 Perform Construction Site Surveying (1-2-3)
This unit enables learners to develop practical knowledge and skills in the basic techniques of land surveying and operating surveying equipment and tools. This unit aims to provide skills of using plans and maps, determining relative positions of points above or on the earth's surface, and producing field notes and taking field measurements, in addition to setting out for construction purposes.

CVT 101 Apply CAD Drafting for Civil Infrastructure (0-4-4)
This unit provides the learners with the knowledge and skills required to use CAD drafting as a means of communication and design in the civil and construction industry. The students will apply the CAD drafting techniques in the civil engineering drawings and plans.

CVT 102 Explore Civil Engineering Materials and Testing (2-2-4)
This Module is designed to provide the candidate with fundamental knowledge of civil engineering materials, with a focus on steel, concrete, masonry, asphalt and timber. This module also aims to provide the skills required to carry out tests in accordance with current standards and to adequately report on the results.

CVT 103 Explore Soil Mechanics (2-2-4)
This module aims to provide learners with the knowledge and skills required to explore the basic physical and mechanical properties of soil as a material for use in civil engineering applications. The module also aims at enabling learners to perform, and analyze the results of field and laboratory tests conducted on soil specimens in accordance with relevant international standards.
Prerequisites: MAT 100, HSE 100

CVT 104 Prepare construction cost and control estimating (1-2-3)
This module aims to provide learners with the knowledge and skills required to examine construction project cost measurement and monitoring in relation to different project parties; namely the Client, the Consultant, and the Contractor. Lerner will also explore the roles of the Quantity Surveyor (QS) and estimator at the various stages of the project. The module also aims to equip learners with the knowledge and skills necessary to quantify civil engineering items/activities, and to prepare accurate construction cost estimates.

CVT 130 Perform Practical Training 1 (0-2-2)
The aim of this module is to provide students with the opportunity to apply theoretical knowledge gained throughout their academic studies to real-world workplace scenarios. By engaging in workplace experiences, students will develop a deeper understanding of industry practices, foster critical thinking, and cultivate the practical expertise necessary for the Civil Engineering profession.

CVT 200 Perform Structural Analysis (1-2-3)
This module aims to provide learners with the knowledge and skills required to analyze determine and indeterminate structures. The main areas are the determination of the vertical and horizontal reactions and equation of three hinged arches, the slope of simply supported beams and cantilever using the moment-area method, the deflation of steel truss using the virtual work method, deflection and slope of beams using the slope-deflection method.

CVT 201 Explore the Fundamentals of Road Design (1-2-3)
This module aims to provide learners with the knowledge and skills required to apply the fundamentals of science and engineering to the design of highways. This module aims to develop students' knowledge and skills in the basic techniques of geometrical design of roads and drainage. The module also aims to provide skills of reading and developing drawings and plans.

CVT 202 Perform technical project-based investigation (2-2-4)
This module is designed for civil engineering diploma students to gain a comprehensive understanding of project requirements and to equip students with the essential knowledge, skills, and practical experience required to conduct thorough and effective technical investigations related to civil engineering projects.

CVT 203 Discover Building Information Modelling in Construction (1-3-4)
This module aims to introduce students to the fundamental concepts and applications of Building Information Modelling (BIM) in the field of construction. Students will gain insight into how BIM technology is used to enhance construction project planning, management, and execution.

CVT 204 Assess Water Supply Engineering systems (1-3-4)
This module aims to provide learners with the knowledge and skills required to install, maintain, and repair water systems and equipment, such as pipes, pumps, valves, and storage tanks. Learners will be introduced to the fundamentals required for ensuring the safety of the water supply, monitoring water quality, and troubleshooting any issues that arise.

CVT 205 Perform Construction Technology Practices (1-3-4)
The aim of this unit "Construction Technology Practices" is to equip individuals with foundational knowledge and practical skills in construction technology. It aims to enhance safety awareness, promote project management abilities, and prepare students for successful careers in the construction industry.

CVT 206 Explore CAD techniques in Civil Engineering (0-3-3)
This module delves into the essential world of Computer-Aided Design (CAD) specifically tailored for Civil Engineers. The students will gain the knowledge and hands-on skills to become proficient in using industry-standard CAD software, enabling the students to create accurate, efficient, and professional engineering drawings and models for various civil engineering projects. The students will understand the core concepts and functionalities of CAD software commonly used in Civil Engineering. They will Learn to create detailed 2D drawings for building plans, and site plans.
Prerequisites: CVT 101

CVT 207 Apply principles of geotechnics and substructure (1-3-4)
This module aims to equip students with the skills and knowledge to practically apply geotechnical principles in substructure engineering within civil engineering contexts. It focuses on enabling students to understand and implement various soil and foundation types, apply substructure design techniques, and utilize soil improvement methods in real-world construction projects.

CVT 208 Explore Reinforced Concrete Elements (2-2-4)
This Unit is designed to provide the learner with a fundamental understanding of how to apply limit state design philosophy to the checking of reinforced concrete elements in accordance with recognised design standards. In addition knowledge of detailing typical slab, beam and column elements will be developed.

CVT 209 Explore Structural Steel elements (1-2-3)
This module is designed for civil engineering diploma students to gain a comprehensive understanding of steel structures, including their properties, Structural loads, various steel sections and their uses, construction methods, and practical applications in civil engineering projects. This module combines theoretical knowledge with hands-on exploration to prepare students for real-world challenges related to steel structures.

CVT 210 Develop Urban Transportation Planning Systems (1-2-3)
This unit aims to provide students with tools & skills required for the planning for future transportation demand in urban areas. It covers the factors to be considered in the planning and update of transportation projects including traffic flow, safety, travel time, accessibility, and all other impacts to transportation systems. It also introduces the notion of traffic impact studies (TIS) used for any planned new development in urban areas.

CVT 211 Examine environmental engineering concepts (1-2-3)
This module aims to provide learners with the knowledge and skills required to identify the principles of environmental engineering, its importance in the natural and built environment, and the applications of environmental engineering solutions in the built environment. Through this course students will examine the naturally occurring environmental phenomena and manmade events and their impact on the environment, and discover the methods of reducing, controlling and regulating the impact on the environment. Finally they will explore the concepts of sustainability, ethics and quality of life.

CVT 230 Perform Practical Training 2 (0-2-2)
The aim of this module is to provide students with the opportunity to apply theoretical knowledge gained throughout their academic studies to real-world workplace scenarios. By engaging in workplace experiences, students will develop a deeper understanding of industry practices, foster critical thinking, and cultivate the practical expertise necessary for the Civil Engineering profession.

CVT 231 Perform practical training in civil engineering based industries. (0-3-3)
This module aims to allow student to participate in an apprenticeship program that allows student to gain an on-job training. It provides learners with the practical knowledge and skills to develop students' ability to show understanding and knowledge to solve problems in the real-world situation. It aims to assess trainee's competence in completing safe and effective on-site hands-on training in disciplines related to Civil Engineering.