

**TCPL 204: COMPUTER AIDED PLUMBING DRAWING**  
**(SYLLABUS CONTENT)**

## Module Assessment

UBTEB will assess the module considering the following guidelines:

(i) The module will be assessed out of 100% as follows:

Continuous assessment	40%
Final examination	60%

(ii) Continuous assessment shall consist of:

- Laboratory/practical work
- Tests
- Assignments to consist of:
  - written questions to be answered from home (Homework)
  - Reports from attended industrial visits, documentaries, and presentations by professionals
  - Practical execution and participation
  - Field visits and assessment

(iii) The Module will have continuous assessment as follows:

- Assignments 10 marks
- Tests 05 marks
- Practical work 25 marks

For Continuous assessment, **Four (4)** assignments, **two (2)** tests and **four (4)** practical exercises shall be required per module.

## YEAR 2 TERM 1

### TCPL 204: Computer Aided Plumbing Drawing

Duration: 30 Hours

#### Module Overview

This module equips the learner with the basic knowledge and skills of using a computer to design and draw various fittings as applied in plumbing. It equips the learner with the skills to develop an intended outlook and template of the required fitting and interpret given drawings for effective implementation.

#### Learning Outcome

By the end of this module, the learner should be able to design and draw plumbing fittings.

#### Competences

The learner:

- installs automatic computer aided drawing (AutoCAD) into the computer.
- identifies and uses AutoCAD commands during the development of the drawing.
- develops the design perception of some form, makes the sketch and uses AutoCAD to draw it.
- draws the plan, the correct section and the elevations.
- designs and draws the details of fittings and appliances.
- makes the title block and writes supporting specifications for fittings, appliances and

<p>schedules.</p> <ul style="list-style-type: none"> <li>• prints the complete drawing.</li> </ul>	
Detailed Module Description	Duration
<p><b>Sub-module 1: AutoCAD Basics</b></p> <ul style="list-style-type: none"> <li>• Introduction to computer aided drawing (CAD)</li> <li>• Need for CAD</li> <li>• AutoCAD commands (lines, offset, trim, extend, erase, mirror, fillet, hatch, scale, dimension, layers, blocks, zoom, chamfer, circle and arcs)</li> <li>• Designing of rain water pipes, gutters, rain water bends</li> <li>• Design of brackets for wash hand basins, kitchen sinks and heaters</li> <li>• Designing of intercepting trap and gully trap</li> </ul>	30 Hours

## YEAR 2 TERM 2

<b>TCPL 204: Computer Aided Plumbing Drawing</b>	
Duration: 30 Hours	
<b>Module Overview</b>	
This module equips the learner with the knowledge and skills of using a computer to construct and develop shapes of various fittings as applied in plumbing.	
<b>Learning Outcome</b>	
By the end of this module, the learner should be able to design, construct and develop shapes of various fittings as applied in plumbing.	
<b>Competences</b>	
The learner:	
<ul style="list-style-type: none"> <li>• designs and draws combined sewer system , separate sewer system and partially separate sewer system</li> <li>• designs septic tank, cesspool and soak away pits</li> <li>• designs and draws manholes and benching</li> <li>• designs open channels, benching and invert</li> <li>• designs concrete and cast iron covers</li> </ul>	
Detailed Module Description	Duration
<p><b>Sub-module 2:Geometric Construction</b></p> <ul style="list-style-type: none"> <li>• designing and drawing of combined sewer system , separate sewer system and partially separate sewer system</li> <li>• designs of septic tank, cesspool and soak away pits</li> <li>• designing and drawing of manholes and benching</li> <li>• designs of open channels benching and invert</li> <li>• design of concrete and cast iron covers</li> </ul>	30 Hours

## YEAR 2 TERM 3

### TCPL 204: Computer Aided Plumbing Drawing

Duration: 24 Hours

#### Module Overview

This module introduces the learner to the basic skills of designing kitchen sinks, wash basins, tile patterns and waste disposals using CAD software.

#### Learning Outcome

By the end of this module, the learner should be able to design kitchen sinks, wash basins, tile patterns and waste disposals.

#### Competences:

The learner:

- Applies drawing of timbering to shallow , moderately and deep trenches
- Designs kitchen sinks, wash basins, tile patterns and waste disposals
- dimensions the drawing.
- hatches the drawing.

#### Detailed Module Description

#### Duration

#### Sub-module 3: Orthographic Projection

24 Hours

- Symbols of 1<sup>st</sup> and 3<sup>rd</sup> angle orthographic projections
- Drawing of timbering to shallow , moderately and deep trenches
- Designs of kitchen sinks, wash basins, tile patterns and waste disposals