

Seychelles Institute of Technology (SIT)

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TVET PROGRAMME



Certificate in Plumbing



Purpose

The purpose of this award is to enable the learner to attain the standard required to achieve the Certificate through the knowledge, skills and attitudes essential in all plumbing, and water distribution pipe installation, maintenance, and repair in accordance with national standards as well as in drainage disposal. Also prepare them for next level in the plumbing field.

Certificate in Plumbing

Introduction

The Certificate in Plumbing is a one and a half year (1205hours) training programme offered to secondary five (S5) school leavers and learners another professional centre. This is equivalent to two (3) semesters. The programme is also offered on part-time to learners already in employment over 6 semesters. Learners on the part-time come to SIT for lectures 1 1/2 days per week.

Entry Criteria

Learners wishing to apply for the Certificate in Plumbing must have **National Examinations:** 40% or better in English, Mathematics and Combined Science or Physics or Design Technology **or** 40% in General Mathematics, General English and General Science **or** Successfully completed TVET program with 40%.

Others: Records of Achievement (interest, previous skills acquired from relevant field and relevant references)

Applicants from another professional centre may be accepted exiting with a Certificate from that Institution.

Learners should be able to:

- ⇒ Demonstrate an in-depth knowledge of the installation,
- ⇒ commissioning and maintenance procedures used in the trade of plumbing.
- ⇒ Demonstrate comprehensive range of specialised plumbing skills using all commonly used plumbing hand and power tools in compliance with all relevant health and safety legislation and best practice.



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- ⇒ Exercise appropriate judgement in planning, diagnostics and delivering all services, installations and maintenance processes relating to the plumbing , water distribution pipe laying, sewage trade as well as solar water heating and rain water harvesting .
- ⇒ Transfer and apply theoretical understanding and technical know-how to inspect, diagnose faults, maintain and repair piping systems in a wide variety of domestic and commercial contexts.
- ⇒ Exercise substantial independence in the workplace, taking responsibility for plumbing duties performed by others and interacting with a variety of individuals and groups to Include customers, colleagues and suppliers.

Take initiative to identify and address self-development and training needs in both an employment and structured training environment
- ⇒ Determine the function and role of the plumber in society to include an awareness of energy conservation and other relevant ecological concerns

Certification

To be awarded certificate in Certificate in Plumbing, the learner must have achieved the expected performance criteria set out in the different elements of each unit that make up the programme. The total credit requirement for this Certificate is 121 Credits .

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Course Outline

Apply health, safety and security procedures in the context of plumbing

Elements

1. Demonstrate knowledge of hazards and risks in the workplaces
2. Demonstrate knowledge of personal safety in workplaces.
3. Demonstrate understanding of occupational health and safety procedures in plumbing practice.
4. Demonstrate understanding of fire safety procedures and practices.
5. Apply safety procedures when working at height.
6. Apply health and safety practices at work.

Use basic hand tools, portable powered tools and equipment.

Elements

1. Demonstrate knowledge of hand tools, power tools and equipment
2. Use basic hand tools and equipment.
3. Perform basic plumbing tasks.

Use English for written and oral communication in the context of plumbing

Elements

1. Apply knowledge of plumbing terminologies.
2. Produce different documents used in plumbing.
3. Demonstrate understanding of the principles of effective communication.
4. Use interpersonal communication skills in a team or group.

Install domestic cold water supply

Elements

1. Demonstrate knowledge of cold water supply in domestic dwellings.
2. Demonstrate understanding of domestic cold water systems.
3. Install cold water systems and components
4. Perform servicing and troubleshooting cold water services.

Install and main sanitary appliances

Elements

1. Demonstrate knowledge of domestic sanitary appliances
 2. Demonstrate understanding in the functioning of sanitary appliances.
 3. Install sanitary appliances.
 4. Perform in servicing and troubleshooting of sanitary appliances.
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Course Outline

Domestic hot water supply

Elements

1. Demonstrate knowledge of hot water systems and their layouts.
2. Install hot water systems and components.
3. Perform servicing and troubleshooting of hot water services.

Install soil and waste drainage systems

Elements

1. Demonstrate understanding of the design requirements of drainage systems.
2. Demonstrate knowledge of traps and associated requirements
3. Perform soil and waste drainage pipes, fittings and jointing process.
4. Connect soil and waste drainage systems.
5. Perform servicing and troubleshooting of soil and waste drainage systems.

Install underground drainage system

Elements

1. Demonstrate understanding of the design requirements of drainage systems.
2. Demonstrate understanding of simple sewage disposal.
3. Install underground drainage system.

Install and maintain rainwater systems

Elements

1. Demonstrate knowledge in rainwater systems.
2. Demonstrate knowledge of selecting rainwater systems components for dwellings.
3. Perform a soundness test and commission rainwater systems.
4. Install gravity rainwater systems.
5. Perform fault diagnosis and rectification procedures on rainwater systems.

Perform basic trade calculations in plumbing.

Elements

1. Apply mathematical operations in calculations with natural numbers, decimals and fractions.
 2. Calculate the perimeter of common shapes
 3. Calculate the area of common shapes.
 4. Calculate the volume of common solid shapes
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Course Outline

Install water pipes for supplying cold and hot water in building

Elements

1. Demonstrate knowledge of pipes and fittings for cold and hot water services.
2. Join hot and cold water pipes.
3. Measure and bend plumbing pipes.
4. Assemble and layout water pipes.
5. Perform servicing and troubleshooting of water piping.

Use basic technical drawing to produce simple drawing.

Elements

1. Demonstrate knowledge of technical drawing.
2. Use and maintain drawing instruments and materials.
3. Produce title page.
4. Draw different types of lines.
5. Produce lettering, numbering and symbols on drawing paper.

Apply technical drawing skills to produce projective drawing

Elements

1. Draw circles.
2. Draw isometric projection.
3. Draw oblique projection.
4. Produce simple drawing to given scale to fit plumbing installation.

Apply basic principles of electrical connection

Elements

1. Demonstrate knowledge of the generation of electricity.
2. Demonstrate knowledge of the different voltages on a distribution network.
3. Perform servicing and repairing electrical appliances.
4. Install different types of lighting circuits.
5. Install different types of socket circuits



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Apply basic information and communication technology

Elements

1. Apply skills of Microsoft word effectively to produce word document.
2. Apply skills of Microsoft excel effectively to produce a spread sheet.
3. Apply skills of Microsoft PowerPoint effectively to create a presentation.
4. Use internet and email applications

Apply knowledge and skills of collaborative skill work in plumbing during Work Based Experience (WBE)

Elements

1. Demonstrate knowledge of the operational structure and the function of the particular establishment or company.
2. Identify knowledge, skills and attitudes necessary to practise the trade.
3. Demonstrate understanding of employment and industrial relations.
4. Demonstrate understanding of a reliable job delivery on construction site.
5. Perform of tasks and services in relation to plumbing installation in domestic, commercial and industrial building.
6. Evaluate experience and participation during work based attachment.



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Plumbing Workshop and facilities



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Year 1		Year 2
Semester 1	Semester 2	Semester 3
Health, Safety and Security Procedures (25/15)	Basic Electrical Skills (30/20)	Basic Trade Calculation (30/20)
Water piping layout (40/30)		Information and Communication Technology (20/10)
(20/15)	(20/15)	
Sanitary Appliances (40/30)		
(20/15)	(20/15)	
Domestic Cold Water Supply (40/30)		Underground drainage (35/25)
(20/15)	(20/15)	
Hand Tools, Power Tools and Equipment (25/15)	Soil and Waste Systems (30/20)	
	(15/10)	(15/10)
English for oral and written communication (20/10)	Technical Drawing 2 (30/20)	Rainwater Systems (30/20)
Technical Drawing 1 (30/25)	Domestic Hot Water Supply (40/30)	
	(20/15)	(20/15)
Work Based Experience (W.B.E rotation 1) (140)	Work Based Experience (W.B.E rotation 2) (140)	Work Based Experience (W.B.E rotation 3) (140)
Number of contact hours/Non-contact hours per semester		
Semester 1: 160/110	Semester 2: 155/110	Semester 3: 150/100
Work Based Experience (420 hrs)		
Total :320 (Contact hrs) + 465 (Non-contact hours) + 420 (WBE) = 1205 Hrs = 121 credits		

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Assessment Technique (s) including weighting (s)

The Craft Certificate grade is based on a weighted average of all unit result grades. Assessment approach varies from one unit to another. During every unit of study there is a minimum number of continuous assessments which the learner must undertake. This could be in the form of small tests and assignments and research. For the final unit assessments, in most cases a learner will have to sit for both a theory paper which can be multiple choice, structured or a mixture and a practical for skills demonstration.

Work based experience (WBE) is a compulsory unit and is assessed by the supervisor in the work place for full-time learners and through compilation of a portfolio and assessed against the performance criteria for the different elements in the WBE unit for learner on part-time.

To attain the required standard, a minimum of a pass grade must be achieved in all assessments prescribed .

Pass mark for every unit on the programme is 55%.

As per SIT Assessment Policy, the final mark for a unit is made up of 40% of all continuous assessments plus 60% from the results of the final unit assessment (s) and the following grades and corresponding marks are used

Not yet Competent-NYC-		0—54%
Pass	- P	55%-69%
Credit or Merit	- M or C	70% - 84%
Distinction	- D -	85% +

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Career Opportunities in the Plumbing Industry

Career Opportunities in the Plumbing Industry. Plumbers are employed to fix leaks or install lavatory appliances, bath tubs, and toiletories amongst others. Plumbers can also work as , pipefitters, pipelayers for water or gas distribution. They install and perform work on various pipe systems, from water treatment plants that service entire towns to homes and high rise buildings

Job prospect for those entering this industry are projected to be excellent. The building and construction industry engaged

In the construction of buildings and other structures, alterations, additions, reconstruction, installation and maintenance and repairs of buildings and other structures.

Some of the job opportunities in the plumbing industry include plumber in the Hotel industry, plumber with contractors, self-employed plumber, water pipe laying technicians and or work in the sewage sector at PUC and others,



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