



COMPETENCY BASED CURRICULUM

LANDSCAPE TECHNOLOGY BQF Certificate-3



**Department of Workforce Planning and Skills
Development
Ministry of Education and Skills Development**



Course Curriculum Landscape Technology BQF Certificate-3

Technical Trainers Training and Resource Center
Department of Workforce Planning and Skills Development
Ministry of Education and Skills Development
Thimphu

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Department of Workforce Planning and Skills Development

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FOREWORD

Bhutan is experiencing a growing demand for skilled workers due to industrial expansion, but there is a significant shortage that hampers progress. Recognizing the importance of trained workers for socio-economic development, the Department of Workforce Planning and Skills Development, with support from the Bhutan Education Skills Training (BEST) project, has launched a new Certificate 3 level curriculum for Landscape Technology.

This first edition curriculum was developed by experts in alignment with the standards of Humber College of Technology and Innovation and focuses on innovative training methods to meet the labor market needs. By emphasizing skills development and assessments based on industry standards, it aims to improve the employability of technical graduates.

The Department appreciates the contributions from experts at Humber College, local institutions, and industry representatives involved in developing this curriculum. It acknowledges that the curriculum will need revisions to adapt to the evolving job market and encourages feedback from Institutes and industry stakeholders to enhance its effectiveness. The ultimate goal is to address the skills mismatch and better meet the workforce requirements of the labor market.



Offtg. Director

Department of Workforce Planning and Skills Development

ACKNOWLEDGEMENT

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COMPETENCY PROFILE

Trade: Landscape Designing

Occupation: Landscape Technician

Competency Area	Sub- Competency Area	Competencies/Task			
A: Carry out Basic Floriculture Practices	A1: Perform ornamental plant identification	A1.01 Identify common ornamental trees	A1.02 Identify common ornamental shrubs	A1.03 Identify common ornamental herbs	A1.04 Identify common ornamental climbers/vines
		A1.05 Identify common ornamental ferns and grasses			
	A2: Perform nursery management	A2.01 Construct greenhouse and shed house	A2.02 Prepare growing media	A2.03 Perform plant propagation	A2.04 Perform seedling care
	A3: Perform plant health management	A3.01 Perform pruning and thinning	A3.02 Perform plant fertilization	A3.03 Manage pests	A3.04 Manage diseases
		A3.05 Manage weed			
B: Carry out landscaping and maintenance	B1: Install hardscape	B1.01 Install patios and walkways	B1.02 Construct gazebos and rest spots	B1.03 Install water features	B1.04 Install deck and platforms
		B1.05 Construct retaining walls and fencings	B1.06 Install planters	B1.07 Install irrigation and drainage systems	
	B2: Install softscape	B2.01 Prepare planting bed	B2.02 Develop lawn	B2.03 Perform plant selection	B2.04 Perform root balling
		B2.05 Perform plantation	B2.06 Perform mulching		
	B3: Perform maintenance	B3.01 Perform hardscape maintenance	B3.02 Perform lawn maintenance	B3.03 Perform plant care	B3.04 Perform irrigation and drainage Management

C: Apply fundamentals and elements of landscape design	C1: Perform hand sketching	C1.01 Identify elements of sketching	C1.02 Sketch softscapes	C1.03 Sketch hardscapes	C1.04 Design a basic garden
	C2: Perform basic CAD programming	C2.01 Identify tools and feature of CAD	C2.02 Perform basic CAD operations	C2.03 Design a basic garden	
	C3: Perform pre-construction activities	C3.01 Perform basic site analysis	C3.02 Prepare site map	C3.03 Perform estimation and costing	
	C4: Perform landscape designing	C4.01 Prepare residential landscape design	C4.02 Prepare urban landscape design	C4.03 Prepare commercial landscape design	

COURSE INFORMATION

COURSE TITLE	Landscape Technician
LEVEL	BQF- Certificate Level 3
COURSE OBJECTIVE	Upon completion of this training program, the trainees will be able to: • Carryout basic floriculture practices • Carry out landscaping and maintenance • Apply fundamentals and elements of landscape design
COURSE DESCRIPTION	This course is designed to provide trainees with the knowledge, skills and attitudes required to be competent in being landscape technician. This course will prepare the trainees to exhibit professionalism, teamwork, adaptability, and safety practices as per the requirement of workplace. To obtain certification of this course, all learning outcomes prescribed must be achieved.
COURSE DURATION	1524 Hours
TRAINER AND TRAINEE RATIO	1:12 (Practical)` 1:20 (Theory)
ENTRY REQUIREMENT	Completed class 10 or equivalent
TVET TRAINER REQUIREMENTS	• Must have a minimum qualification of Diploma in Landscape/Forestry/ Horticulture with five years of work experience in the relevant field OR Bachelors in relevant field with three years of work experience • Must have undergone Training of Trainers-Technical Instruction and Vocational Andragogy;

COURSE OUTLINE

Sl. No	Subject /Module	Duration (Hours)	Content Competencies (Mapped)
1.	Core modules	840	CC
2.	OJT	420	CC
3.	Applied Dzongkha	42	SS
4.	ICT	48	SS
5.	Applied Mathematics	53	SS
6.	Technical English	51	SS
7.	Assessment	70	
	Total Course Duration	1524	

Note: (*) This curriculum contains core modules which cover main competencies of Landscape Technician BQF Certificate-3 and OJT component. There are separate curricula for subjects/modules for delivery of soft skills, professional development & values and environmental concern & safety. In order to achieve the qualification of Landscape Technician BQF Certificate-3, the subjects and modules listed must be accomplished as per the credit hours provided.

Content Competencies:

CC-Core Competencies

SS-Soft Skills

PD-Professional Development and Values

ES-Environmental concern and Safety

COURSE STRUCTURE FOR CORE COMPETENCIES

Training Modality	Module Title	Learning outcomes	Nominal Duration (Hour)
1. Institute Training	A. Carryout basic floriculture practices	A1. Perform ornamental plants identification A2. Perform nursery management A3. Perform plant health management	183
	B. Carry out landscaping and maintenance	B1. Install hardscape B2. Install softscape B3. Perform maintenance	348
	C. Apply fundamentals and elements of landscape design	C1. Perform hand sketching C2. Perform basic CAD programming C3. Perform pre-construction activities C4. Perform landscape designing	309
2. On the Job Training	A. Carryout basic floriculture practices	A1. Perform ornamental plants identification A2. Perform nursery management A3. Perform plant health management	420
	B. Carry out landscaping and maintenance	B1. Install hardscape B2. Install softscape B3. Perform maintenance	
	C. Apply fundamentals and elements of landscape design	C1. Perform hand sketching C2. Perform basic CAD programming C3. Perform pre-construction activities C4. Perform landscape designing	
Total CC Duration:			1260

ASSESSMENT AND CERTIFICATION SYSTEM

ASSESSMENT

Formative assessment for every module and learning outcome will be conducted through assignments, project works, continuous assessment, demonstration of practical skills/observations, oral questioning and written test.

Summative assessment after completion of each national certificate level will be conducted by TVET Quality Council, Bhutan Qualifications and professional certification authority, MoESD as per the National Competency Standards and Guidelines for National Assessment and Certification System, provided the course is accredited with TVET Quality Council, Bhutan Qualifications and professional certification authority, MoESD.

CERTIFICATION

On successful completion of every module, the institute will award a certificate of achievement to the trainees. The TVET Quality Council, Bhutan Qualifications and professional certification authority, MoESD will award a National Certificate to the trainees upon the successful completion of NC level assessment.

COURSE DELIVERY

1. Modular
2. Demonstration
3. Lecture
4. Industrial training/attachment
5. Project work
6. Problem-based learning
7. Project-based learning

RESOURCES

Materials

Pen, artist pencil set, notebook, pipe thread tape, sealant, pipe joints, tap head, pipes, sprinkler heads, drip emitters, bubblers, sand, gravel, hacksaw blade, plastic water tank, cement, poly pot, polythene sheet, seeds, mother stock, rooting hormones, fungicides, grafting tape, fertilizer, nursery journal, growing media, pesticides and weedicides.

Tools

Spade, shovel, pickaxe, crowbar, hacksaw, PVC primer, measuring tape, hand magnifying lens, ruler, carpentry tools, masonry tools, wrench set, secateurs, rake, watering pipe, wheel barrow, portrays, knife, shovel, spade, bowl, watering can, rapid diagnostic kit, bucket, jug, drawing template kit, soil-testing kits, binoculars, hand lens and calculators

Equipment

Water pressure gauge, brush cutter, high speed cutters, camera, GPS, color printer and laptop/computer with internet connection

Software

Plant identification application, CAD and site analysis application

PPE

Working dress, safety helmet, safety boots, safety gloves, safety goggles, respirators, UV protection glasses, dust mask and hand sanitizers

Learning Materials

- Competency Based Learning Materials (CBLM)

- Reference books
- Hand-outs
- Audio visuals

Infrastructure and training facilities

- ***Theory classroom size:*** Minimum of 1.5 m² per trainee;
- ***Practical Workshop size:*** Minimum of 3 m² per trainee. Variables must be considered depending upon type of skills being taught and the number of trainees participating at a time.

**MODULE INFORMATION: LANDSCAPE TECHNICAIN
BQF-CERTIFICATE 3**

**MODULE 1 ON
CARRYING OUT BASIC FLORICULTURE PRACTICES**

MODULE INFORMATION

Occupation	Landscape technician
Competency Area	Carryout basic floriculture practices
Module Title	Carrying out basic floriculture practices
Module Code	6113- L3-M1
Module Description	This module is structured to provide learners with the knowledge, skills and right attitude required to perform ornamental plant identification, perform nursery management and perform plant health management
Nominal Duration	183 Hours
Certificate Level	BQF Certificate Level 3
Pre-requisite	Completed class 10 or equivalent
Learning Outcome	1. Perform ornamental plant identification 2. Perform nursery management 3. Perform plant health management

Module Title	Carrying out basic floriculture practices		
Module Code	6113- L3-M1		
Learning Outcome 1	Perform ornamental plant identification		
Duration	Theory: 26 hours	Practical: 76 hours	Total: 102 hours
Assessment Criteria	- Common ornamental trees are identified as per the job requirement following the standard procedure - Common ornamental shrubs are identified as per the job requirement following the standard procedure - Common ornamental herbs are identified as per the job requirement following the standard procedure - Common ornamental climbers/vines are identified as per the job requirement following the standard procedure - Common ornamental ferns and grasses is identified as per the job requirement following the standard procedure		
Content	A1.00 Introductory Knowledge - Introduction to landscape - History about landscape designing - Purpose of landscape designing - Current trend and future scope for landscape technician A1.01 Identifying common ornamental trees Knowledge - Basic plant terminology - Basic plant morphology - Basic plant ecology - Key characteristics of ornamental trees - Types of common ornamental trees - Uses of common ornamental trees Skills - Observation skills - Analytical skills - Planning skills Attitude, safety and environmental concern - Being efficient in using resources - Being vigilant and patient - Having work ethics and integrity - Proper handling of tools, materials and equipment - Having sense of ownership and accountability - Ensuring appropriate use of PPE - Ensuring proper disposal of waste - Ensuring to follow environmental rules and regulations - Ensuring to follow OHS rules and regulation A1.02 Identifying common ornamental shrubs Knowledge - Basic ornamental shrub ecology - Key characteristics of ornamental shrubs - Types of common ornamental shrubs		

	● Uses of common ornamental shrubs Skills ● Observation skills ● Analytical skills ● Planning skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation A1.03 Identifying common ornamental herbs Knowledge ● Basic ornamental herb ecology ● Key characteristics of ornamental herbs ● Types of common ornamental herbs ● Uses of common ornamental herbs Skills ● Observation skills ● Analytical skills ● Planning skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation A1.04 Identifying common ornamental climbers/vines Knowledge ● Basic ornamental climber ecology ● Key characteristics of ornamental climber ● Types of common ornamental climber ● Uses of ornamental climbers Skills ● Observation skills
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	● Analytical skills ● Planning skills <i>Attitude, safety and environmental concern</i> ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation A1.05 Identifying common ornamental ferns and grasses <i>Knowledge</i> ● Basic ornamental ferns and grasses ecology ● Key characteristics of ornamental ferns and grasses ● Types of common ornamental ferns and grasses ● Uses of ornamental ferns and grasses <i>Skills</i> ● Observation skills ● Analytical skills ● Planning skills <i>Attitude, safety and environmental concern</i> ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation
Learning Conditions	Learning Materials ● Competency Based Learning Materials (CBLM) ● Hand-outs ● Audio Visuals ● Reference books ● Manuals Learning Facilities and infrastructure ● Classroom with adequate facilities ● Information Technology (IT) lab ● Library

	Materials ● Pen, paper, notebook Tools ● Hand magnifying lens and ruler PPE ● Workshop dress, safety boots, safety gloves, rain boots, dust mask and hand sanitizer
Underpinning skills	● Team work ● Communication ● Negotiation ● Creativity ● Problem solving ● Time management
Instructional Methodologies	The trainer shall use <i>inter alia</i>, the following instructional methods: ● Lecture ● Interactive discussion ● Demonstration ● Industrial visit/training ● Guided practice ● Group practice with project-based learning ● Individual practice with problem-based learning
Method of Assessment	The trainer shall use <i>inter alia</i>, the following assessment methods: ● Practical observation ● Oral/viva-voce ● Written test ● Assignment ● Project work ● Rubrics

Module Title	Carryout basic floriculture practices		
Module Code	6113- L3-M1		
Learning Outcome 2	Perform nursery management		
Duration	Theory: 21 hours	Practical: 60 hours	Total: 81 hours
Assessment Criteria	● Greenhouse and shed house is constructed as per the job requirement following the standard procedure ● Growing media is prepared as per the job requirement following the standard procedure ● Plant propagation is performed as per the job requirement following the standard procedure ● Seedling care is performed as per the job requirement following the standard procedure		
Content	A2.01 Constructing greenhouse and shed house Knowledge ● Criteria for site selections ● Types of greenhouses and its functions ● Types of shed house and its functions ● Introduction to norms and standard for nursey and plantation ● Types of cladding materials and its properties Skills ● Observation skills ● Analytical skills ● Planning skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation A2.02 Preparing growing media Knowledge ● Introduction to growing media ● Types of growing media ● Properties of growing media ● process of sterilizing growing media		

	● process of media nutrient availability test ● Nutrient requirement of growing media as per plant species Skills ● Using PH testing kits ● Observation skills ● Analytical skills ● Planning skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation A2.03 Performing plant propagation Knowledge ● Introduction to plant propagation ● Methods of propagation ● Propagation season ● Environment conditions for propagation ● Benefits of propagation Skills ● Using secateurs ● Observation skills ● Analytical skills ● Planning skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation A2.04 Performing seedling care Knowledge ● Introduction to nursery management ● Integrated nursery pest and diseases management
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	● Procedure of seedling hardening ● Techniques of seedling pinching and transplanting (pricking) Skills ● Observation skills ● Analytical skills ● Planning skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation
Learning Conditions	Learning Materials ● Competency Based Learning Materials (CBLM) ● Hand-outs ● Audio Visuals ● Reference books ● Manuals Learning Facilities and infrastructure ● Classroom with adequate facilities ● Information Technology (IT) lab ● Library Materials ● Pen, pencil, notebook, poly pot, polythene sheet, seeds, mother stock, rooting hormones, fungicide, grafting tape, fertilizer, nursery journal and growing media Tools ● Secateurs, rake, watering pipe, wheel barrow, pruners, knife, shovel, spade, bowl, pH & nutrient tester and watering can PPE ● Workshop dress, safety boots, safety gloves, rain boots, dust mask and hand sanitizer
Underpinning skills	● Team work ● Communication ● Negotiation ● Creativity ● Problem solving ● Time management

Instructional Methodologies	The trainer shall use <i>inter alia</i>, the following instructional methods: ● Lecture ● Interactive discussion ● Demonstration ● Industrial visit/training ● Guided practice ● Group practice with project-based learning ● Individual practice with problem-based learning
Method of Assessment	The trainer shall use <i>inter alia</i>, the following assessment methods: ● Practical observation ● Oral/viva-voce ● Written test ● Assignment ● Project work ● Rubrics

Module Title	Carryout basic floriculture practices		
Module Code	6113- L3-M1		
Learning Outcome 3	Perform plant health management		
Duration	Theory: 22 hours	Practical: 58 hours	Total: 80 hours
Assessment Criteria	● Pruning and thinning is performed as per job requirement following standard procedure ● Plant feeding is performed as per job requirement following standard procedure ● Pests is managed as per job requirement following standard procedure ● Diseases is managed as per job requirement following standard procedure ● Weed is managed as per job requirement following standard procedure		
Content	A3.01 Performing pruning and thinning Knowledge ● Types of pruning and thinning techniques ● Season for pruning and thinning ● Importance of pruning and thinning Skills ● Using pruning and thinning tools ● Observation skills ● Analytical skills ● Planning skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation A3.02 Performing plant fertilization Knowledge ● Types of fertilizers and its uses ● Method, time and dosage of feeding ● Basics of plant nutrient requirement ● Common symptoms of nutrient deficiency ● Advantages and disadvantages of using fertilizer ● Storage and handling of fertilizers Skills ● Observation skills ● Analytical skills ● Planning skills Attitude, safety and environmental concern ● Being efficient in using resources		
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	● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation A3.03 Managing pests <i>Knowledge</i> ● Common types of pests ● Principles and practices of Integrated pest Management ● Types of pesticides and its applications ● Dos and don'ts while using pesticides <i>Skills</i> ● Observation skills ● Analytical skills ● Planning skills ● Problem solving skills <i>Attitude, safety and environmental concern</i> ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation A3.04 Managing diseases <i>Knowledge</i> ● Common type of disease ● Integrated diseases management ● Basic sanitations for plantation ● Dos and don'ts while using fungicide <i>Skills</i> ● Observation skills ● Analytical skills ● Planning skills ● Problem solving skills <i>Attitude, safety and environmental concern</i> ● Being efficient in using resources ● Being vigilant and patient
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	● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation A3.05 Managing weeds Knowledge ● Types of weeds ● Methods to control weeds ● Types of weedicides and its application ● Dos and don'ts while using weedicides Skills ● Observation skills ● Analytical skills ● Planning skills ● Problem solving skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation
Learning Conditions	Learning Materials ● Competency Based Learning Materials (CBLM) ● Hand-outs ● Audio Visuals ● Reference books ● Manuals Learning Facilities and infrastructure ● Classroom with adequate facilities ● Information Technology (IT) lab ● Library Materials ● Pen, pencil, weedicide, pesticides, fungicide, mulching material and notebook Tools ● Spades, shovel, sprayer, bucket, jug, knife, sickle, rapid diagnostic kits, hand magnifying glass and hoe Equipment

	● Brush cutter, camera and wheel barrow PPE ● Workshop dress, safety boots, safety gloves, rain boots, dust mask and hand sanitizer
Underpinning skills	● Team work ● Communication ● Negotiation ● Creativity ● Problem solving ● Time management
Instructional Methodologies	The trainer shall use <i>inter alia</i>, the following instructional methods: ● Lecture ● Interactive discussion ● Demonstration ● Industrial visit/training ● Guided practice ● Group practice with project-based learning ● Individual practice with problem-based learning
Method of Assessment	The trainer shall use <i>inter alia</i>, the following assessment methods: ● Practical observation ● Oral/viva-voce ● Written test ● Assignment ● Project work ● Rubrics

**MODULE 2 ON
PERFORMING LANDSCAPING AND MAINTENANCE**

MODULE INFORMATION

Occupation	Landscape Technician
Competency Area	Perform landscaping and maintenance
Module Title	Performing landscaping and maintenance
Module Code	6113-L3-M2
Module Description	This module is structured to provide learners with the knowledge, skills and right attitude required to install hardscape, perform soft scaping and perform maintenance
Nominal Duration	348 Hours
Certificate Level	BQF Certificate Level 3
Pre-requisite	Completed module 2
Learning Outcome	1. Install hardscape 2. Install Softscape 3. Perform maintenance

Module Title	Carrying out landscaping and maintenance		
Module Code	6113-L3-M2		
Learning Outcome 1	Install hardscape		
Duration	Theory:27 hours`	Practical:156 hours	Total: 183 hours
Assessment Criteria	● Patios and walkways are installed as per the job requirement following standard procedure ● Gazebos and rest spots are constructed as per the job requirement following standard procedure ● Water features are installed as per the job requirement following standard procedure ● Deck and platforms are installed as per the job requirement following standard procedure ● Retaining walls and fencings are constructed as per the job requirement following standard procedure ● Planters are installed as per the job requirement following standard procedure ● Irrigation and drainage system is installed as per the job requirement following standard procedure		
Content	B1.00 ● Introduction to concrete ● Elements of concrete ● Introduction to site surveying B1.01 Installing patios and walkways Knowledge ● Types of Patio and Walkways ● Components required for patios and walkways installation ● Patios and Walkways construction methods ➢ base preparation ➢ laying hardscape components (pattern and design) ➢ finishing Skills ● Observation skills ● Analytical skills ● Planning skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation B1.02 Constructing gazebos and rest spots Knowledge ● Types of gazebos and rest spots		

	● Components required for gazebos and rest spots construction ● Gazebos and rest spots construction methods ✓ base preparation, ✓ laying hardscape components (pattern and design) ✓ Finishing <i>Skills</i> ● Observation skills ● Analytical skills ● Planning skills <i>Attitude, safety and environmental concern</i> ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation B1.03 Installing water features <i>Knowledge</i> ● Types of water features ● Components required for water feature installation ● Water features installation methods ➤ including base preparation ➤ laying hardscape components (shape and design) ➤ finishing <i>Skills</i> ● Observation skills ● Analytical skills ● Planning skills ● Problem solving skills <i>Attitude, safety and environmental concern</i> ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation B1.04 installing deck and platforms <i>Knowledge</i> ● Types of Decks and Platforms ● Components required for decks and platform installation
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	● Decks and platform installation methods ➤ base preparation ➤ laying hardscape components (pattern and design) ➤ finishing Skills ● Observation skills ● Analytical skills ● Planning skills ● Problem solving skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation B1.05 Constructing retaining walls and fencings Knowledge ● Types of retaining walls and fences and its functions ● Components required for retaining wall and fences construction ● Retaining wall and fences construction methods ➤ base preparation ➤ laying hardscape components (design) Skills ● Observation skills ● Analytical skills ● Planning skills ● Problem solving skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation B1.06 Installing planters Knowledge ● Types of planters ● Components required for planters ● Planter installation methods
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	➤ base preparation ➤ laying hardscape components (pattern and design) ➤ finishing Skills ● Observation skills ● Analytical skills ● Planning skills ● Problem solving skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation B1.07 Installing irrigation and drainage system Knowledge ● Importance of landscape irrigation and drainage system ● Types of landscape irrigation and drainage system ● Water management strategies Skills ● Observation skills ● Analytical skills ● Planning skills ● Problem solving skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation
Learning Conditions	Learning Materials ● Competency Based Learning Materials (CBLM) ● Hand-outs ● Audio Visuals ● Reference books ● Manuals Learning Facilities and infrastructure

	● Classroom with adequate facilities ● Information Technology (IT) lab ● Library Materials ● Pen, pencil, notebook, pipe thread tape, sealant, pipe joints, tap head, pipes, sprinkler heads, drip emitters, bubblers, sand, gravel, hacksaw blade, plastic water tank and cement Tools ● Spade, shovel, pickaxe, crowbar, hacksaw, PVC primer, measuring tape, screw driver set and wrench set Equipment ● Water pressure gauge PPE ● Workshop dress, safety boots, safety gloves, rain boots, dust mask and hand sanitizer
Underpinning skills	● Team work ● Communication ● Negotiation ● Creativity ● Problem solving ● Time management
Instructional Methodologies	The trainer shall use <i>inter alia</i>, the following instructional methods: ● Lecture ● Interactive discussion ● Demonstration ● Industrial visit/training ● Guided practice ● Group practice with project-based learning ● Individual practice with problem-based learning
Method of Assessment	The trainer shall use <i>inter alia</i>, the following assessment methods: ● Practical observation ● Oral/viva-voce ● Written test ● Assignment ● Project work ● Rubrics

Module Title	Carrying out landscaping and maintenance		
Module Code	6113-L3-M2		
Learning Outcome 2	Install Softscape		
Duration	Theory:28 hours	Practical:62 hours	Total: 90 hours
Assessment Criteria	● Planting bed is prepared as per the job requirement following standard procedure ● Lawn is developed as per the job requirement following standard procedure ● Plant selection is performed as per the job requirement following standard procedure ● Root balling is performed as per the job requirement following standard procedure ● Plantation is performed as per the job requirement following standard procedure ● Mulching is performed as per the job requirement following standard procedure		
Content	B2.00 ● Introduction to environmental conservation ● Process of managing ecosystem ● Introduction to habitat retention and rehabilitation ● Introduction to Rain water Harvesting B2.01 Preparing planting bed Knowledge ● Types of planting bed and its functions ● Basics of soil profile and horizon ● Components required for planting bed ● Planting bed preparation methods ➤ base preparation ➤ pattern and design ➤ finishing/edging Skills ● Observation skills ● Analytical skills ● Planning skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation B2.02 Developing lawn Knowledge ● Introduction to lawn development		

	● Common lawn grass species and its sowing requirements ● Basics of mowing techniques Skills ● Observation skills ● Analytical skills ● Planning skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation B2.03 Performing plant selection Knowledge ● Importance of plant selection ● Introduction to the native, exotic and invasive species. ● Basic plant selection techniques Skills ● Observation skills ● Analytical skills ● Planning skills ● Problem solving skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation B2.04 Performing root balling Knowledge ● Introduction to root balling ● Root balling techniques ● Dos and don'ts while root balling Skills ● Observation skills ● Analytical skills ● Planning skills
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	● Problem solving skills <i>Attitude, safety and environmental concern</i> ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation B2.05 Performing plantation <i>Knowledge</i> ● Introduction to Plantation techniques ● Introduction to habitat ecology <i>Skills</i> ● Observation skills ● Analytical skills ● Planning skills ● Problem solving skills <i>Attitude, safety and environmental concern</i> ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation B2.06 Performing mulching <i>Knowledge</i> ● Introduction to mulch ● Benefit of mulch ● Types of mulch and its characteristics <i>Skills</i> ● Observation skills ● Analytical skills ● Planning skills ● Problem solving skills <i>Attitude, safety and environmental concern</i> ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment
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	● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation
Learning Conditions	Learning Materials ● Competency Based Learning Materials (CBLM) ● Hand-outs ● Audio Visuals ● Reference books ● Manuals Learning Facilities and infrastructure ● Classroom with adequate facilities ● Information Technology (IT) lab ● Library Materials ● Pen, pencil, mulch, burlap/hessian cloth, rope and notebook Tools ● Wheel barrow, shovel, spade, pickaxe, crowbar, knife, secateur, treetop pruners, watering can/pipe, half-moon edger, tree root cutter and root pruner PPE ● Workshop dress, safety boots, safety gloves, rain boots, dust mask and hand sanitizer
Underpinning skills	● Team work ● Communication ● Negotiation ● Creativity ● Problem solving ● Time management
Instructional Methodologies	The trainer shall use <i>inter alia</i>, the following instructional methods: ● Lecture ● Interactive discussion ● Demonstration ● Industrial visit/training ● Guided practice ● Group practice with project-based learning ● Individual practice with problem-based learning
Method of Assessment	The trainer shall use <i>inter alia</i>, the following assessment methods: ● Practical observation ● Oral/viva-voce ● Written test ● Project work ● Rubrics

Module Title	Performing landscaping and maintenance		
Module Code	6113-L3-M2		
Learning Outcome 3	Perform maintenance		
Duration	Theory:15 hours	Practical:60 hours	Total: 75 hours
Assessment Criteria	● Hardscape maintenance is performed as per job requirement following the standard procedure ● Lawn maintenance is performed as per job requirement following the standard procedure ● Plant care is performed as per job requirement following the standard procedure ● Irrigation and drainage management is performed as per job requirement following the standard procedure		
Content	B3.01 Performing hardscape maintenance Knowledge ● Costing and estimation of repair works ● Importance and schedule of routine monitoring and maintenance Skills ● Observation skills ● Analytical skills ● Planning skills ● Numeracy skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation B3.02 Performing lawn maintenance Knowledge ● Introduction to lawn management ● Common lawn pest and diseases Skills ● Observation skills ● Analytical skills ● Planning skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations		

	● Ensuring to follow OHS rules and regulation B3.03 Performing plant care Knowledge ● Seasonal plant maintenances ● Gardening journal keeping Skills ● Observation skills ● Analytical skills ● Planning skills ● Problem solving skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation B3.04 Performing irrigation and drainage management Knowledge ● Introduction to landscape irrigation and drainage maintenance Skills ● Observation skills ● Analytical skills ● Planning skills ● Problem solving skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation
Learning Conditions	Learning Materials ● Competency Based Learning Materials (CBLM) ● Hand-outs ● Audio Visuals ● Reference books ● Manuals

	Learning Facilities and infrastructure ● Classroom with adequate facilities ● Information Technology (IT) lab ● Library Materials ● Pen, Pencil and notebook, PVC pipes, drainage grates, Thread seal tape, cement, gravel, sand, hacksaw blade and Nail Tools ● Hacksaw, secateurs, Pilers, Plumbing Tools, Spade, Crowbar, Shovel, Pickaxe, bucket, jug, wheel barrow, masonry tools, half-moon edger and Hammer Equipment ● Jack hammer, drip Irrigation Kits and water pump PPE ● Workshop dress, safety boots, safety gloves, rain boots, dust musk and hand sanitizer
Underpinning skills	● Team work ● Communication ● Negotiation ● Creativity ● Problem solving ● Time management
Instructional Methodologies	The trainer shall use <i>inter alia</i>, the following instructional methods: ● Lecture ● Interactive discussion ● Demonstration ● Industrial visit/training ● Guided practice ● Group practice with project-based learning ● Individual practice with problem-based learning
Method of Assessment	The trainer shall use <i>inter alia</i>, the following assessment methods: ● Practical observation ● Oral/viva-voce ● Written test ● Assignment ● Project work ● Rubrics

**MODULE 3 ON
APPLYING FUNDAMENTALS AND ELEMENTS OF DESIGN**

MODULE INFORMATION

Occupation	Landscape technician
Competency Area	Apply fundamentals and elements of landscape design
Module Title	Applying fundamentals and elements of landscape design
Module Code	6113-L3-M3
Module Description	This module is structured to provide learners the knowledge, skills and right attitude required to perform hand sketching, perform basic CAD programming, perform pre-construction activities and perform landscape designing
Nominal Duration	309 Hours
Certificate Level	BQF Certificate 3
Pre-requisite	Completed 6113-L3-M2
Learning Outcome	1. Perform hand sketching 2. Perform basic CAD programming 3. Perform pre-construction activities 4. Perform landscape designing

Module Title	Applying fundamental and elements of landscape design		
Module Code	6113-L3-M3		
Learning Outcome 1	Perform hand sketching		
Duration	Theory: 12 hours	Practical: 90 hours	Total: 102 hours
Assessment Criteria	● Elements of sketching is identified as per the job requirement following standard procedure ● Softscapes are sketched as per the job requirement following standard procedure ● Hardscapes are sketched as per the job requirement following standard procedure ● A basic garden is designed as per the job requirement following standard procedure		
Content	C1.01 Identifying elements of sketching Knowledge ● Basic drawing techniques ● Basic knowledge on drawing tools and materials ● Sketching styles and techniques ● Commonly used sketching annotation ● Types of lines used in landscape sketching Skills ● Observation skills ● Analytical skills ● Planning skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation C1.02 Sketching softscapes Knowledge ● Elements of softscapes ● Different shapes used in softscape sketching ● Different contours and outlines used in softscape sketching ● Use of shading in sketching ● Types of hues, tones, and shade of coloring in sketching Skills ● Drawing skills ● Observation skills ● Analytical skills ● Planning skills		

	<i>Attitude, safety and environmental concern</i> ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation C1.03 Sketching hardscape <i>Knowledge</i> ● Elements of hardscapes ● Different shapes used in hardscape sketching ● Different contours and outlines used in hardscape sketching ● Types of hues, tones, and shade of coloring in sketching <i>Skills</i> ● Observation skills ● Analytical skills ● Planning skills ● Problem solving skills <i>Attitude, safety and environmental concern</i> ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation C1.04 Designing a basic garden <i>Knowledge</i> ● Types of gardens and its functions ● Basic principles of landscape design <i>Skills</i> ● Observation skills ● Analytical skills ● Planning skills ● Problem solving skills <i>Attitude, safety and environmental concern</i> ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability
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	● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation
Learning Conditions	Learning Materials ● Competency Based Learning Materials (CBLM) ● Hand-outs ● Audio Visuals ● Reference books ● Manuals Learning Facilities and infrastructure ● Classroom with adequate facilities ● Information Technology (IT) lab ● Library Materials ● Pen, artist pencil set, color pencil, eraser, butter paper, tracing paper and sketchbook Tools ● Hand magnifying lens, drawing template kit and scale ruler PPE ● Workshop dress, safety boots, safety gloves, rain boots, dust mask and hand sanitizer
Underpinning skills	● Team work ● Communication ● Negotiation ● Creativity ● Problem solving ● Time management
Instructional Methodologies	The trainer shall use <i>inter alia</i>, the following instructional methods: ● Lecture ● Interactive discussion ● Demonstration ● Industrial visit/training ● Guided practice ● Group practice with project-based learning ● Individual practice with problem-based learning
Method of Assessment	The trainer shall use <i>inter alia</i>, the following assessment methods: ● Practical observation ● Oral/viva-voce ● Written test ● Assignment ● Project work ● Rubrics

Module Title	Applying fundamentals and elements of landscape design		
Module Code	6113-L3-M3		
Learning Outcome 2	Perform basic CAD programming		
Duration	Theory: 21 hours	Practical: 66 hours	Total: 87 hours
Assessment Criteria	- Tools and features of CAD is identified as per the job requirement following standard procedure - Basic CAD operations are performed as per the job requirement following standard procedure - A basic garden is designed as per the job requirement following standard Procedure		
Content	C2.01 Identifying tools and features of CAD Knowledge - Introduction to CAD software - Tools and features of CAD software and its functions - Common CAD software used in landscape designing - Basic concept of Geometry and Mathematics Skills - Using CAD software - Observation skills - Analytical skills - Planning skills Attitude, safety and environmental concern - Being efficient in using resources - Being vigilant and patient - Having work ethics and integrity - Proper handling of tools, materials and equipment - Having sense of ownership and accountability - Ensuring appropriate use of PPE - Ensuring proper disposal of waste - Ensuring to follow environmental rules and regulations - Ensuring to follow OHS rules and regulation C2.02 Performing basic CAD operations Knowledge - Types of final file format and its uses - Advantage of drafting in CAD software - Annotation units and conversion methods - Drafting styles and standards - Components of design (plan, section, cross-section and elevation) - Method for calculation of area using CAD feature Skills - Using CAD software - Observation skills - Analytical skills - Planning skills Attitude, safety and environmental concern - Being efficient in using resources - Being vigilant and patient - Having work ethics and integrity		

	● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation C2.03 Designing a basic garden Knowledge ● Procedure to insert pre-drawn outline of site Skills ● Using CAD software ● Observation skills ● Analytical skills ● Planning skills ● Problem solving skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation
Learning Conditions	Learning Materials ● Competency Based Learning Materials (CBLM) ● Hand-outs ● Audio Visuals ● Reference books ● Manuals Learning Facilities and infrastructure ● Classroom with adequate facilities ● Information Technology (IT) lab ● Library Materials ● Pen, pencil and notebook Equipment ● Laptop/desktop with internet connection Software ● Computer Aided Designing software PPE ● Workshop dress, safety boots, safety gloves, rain boots, dust mask and hand sanitizer

Underpinning skills	● Team work ● Communication ● Negotiation ● Creativity ● Problem solving ● Time management
Instructional Methodologies	The trainer shall use <i>inter alia</i>, the following instructional methods: ● Lecture ● Interactive discussion ● Demonstration ● Industrial visit/training ● Guided practice ● Group practice with project-based learning ● Individual practice with problem-based learning
Method of Assessment	The trainer shall use <i>inter alia</i>, the following assessment methods: ● Practical observation ● Oral/viva-voce ● Written test ● Assignment ● Project work ● Rubrics

Module Title	Applying fundamentals and elements of landscape design		
Module Code	6113-L3-M3		
Learning Outcome 3	Perform pre-construction activities		
Duration	Theory: 6 hours	Practical: 54 hours	Total: 60 hours
Assessment Criteria	● Basic site analysis is performed as per the job requirement following standard procedure ● Site map is prepared as per the job requirement following standard procedure ● Estimation and costing is performed as per the job requirement following standard procedure		
Content	C3.01 Performing basic site analysis Knowledge ● Basic key features of the site characteristics, opportunities and challenges. ● Importance of site analysis ● Basic site analysis procedure Skills ● Observation skills ● Analytical skills ● Planning skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation C3.02 Preparing site map Knowledge ● Foundational tools for the landscape design process. ● Introduction to landscape mapping Skills ● Observation skills ● Analytical skills ● Planning skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations		

	● Ensuring to follow OHS rules and regulation C3.03 Performing costing and estimation Knowledge ● Introduction to BSR (Bhutan Schedule of Rate) ● Norms and standards of nursery and plantation (costing) ● Introduction to cost index and inflation rate Skills ● Observation skills ● Analytical skills ● Planning skills ● Numeracy skills ● Problem solving skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation
Learning Conditions	Learning Materials ● Competency Based Learning Materials (CBLM) ● Hand-outs ● Audio Visuals ● Reference books ● Manuals Learning Facilities and infrastructure ● Classroom with adequate facilities ● Information Technology (IT) lab ● Library Materials ● Pen, pencil and notebook Tools ● Soil-Testing Kits, binoculars, hand Lens, measuring tape and calculator Equipment ● Digital Camera, GPS, computer and color printer Application ● Site Analysis Apps and Plant Identification Apps PPE ● Workshop dress, safety boots, safety gloves, rain boots, dust musk and hand sanitizer

Underpinning skills	● Team work ● Communication ● Negotiation ● Creativity ● Problem solving ● Time management
Instructional Methodologies	The trainer shall use <i>inter alia</i>, the following instructional methods: ● Lecture ● Interactive discussion ● Demonstration ● Industrial visit/training ● Guided practice ● Group practice with project-based learning ● Individual practice with problem-based learning
Method of Assessment	The trainer shall use <i>inter alia</i>, the following assessment methods: ● Practical observation ● Oral/viva-voce ● Written test ● Assignment ● Project work ● Rubrics

Module Title	Performing landscaping and maintenance		
Module Code	6113-L3-M3		
Learning Outcome 4	Perform landscape designing		
Duration	Theory:6 hours	Practical:54 hours	Total: 60 hours
Assessment Criteria	● Residential landscape design is prepared as per the job requirement following standard procedure ● Urban landscape design is prepared as per the job requirement following standard procedure ● Commercial landscape is prepared as per the job requirement following standard procedure		
Content	C4.01 Preparing residential landscape design Knowledge ● Introduction to residential landscape design ● Principles of residential landscape design Skills ● Observation skills ● Analytical skills ● Planning skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation C4.02 Preparing urban landscape design Knowledge ● Introduction to urban landscape designing ● Principles of urban landscape designing Skills ● Observation skills ● Analytical skills ● Planning skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation		

	C4.03 Preparing commercial landscape design Knowledge ● Introduction to commercial landscape designing ● Principle of commercial landscape design Skills ● Observation skills ● Analytical skills ● Planning skills ● Problem solving skills Attitude, safety and environmental concern ● Being efficient in using resources ● Being vigilant and patient ● Having work ethics and integrity ● Proper handling of tools, materials and equipment ● Having sense of ownership and accountability ● Ensuring appropriate use of PPE ● Ensuring proper disposal of waste ● Ensuring to follow environmental rules and regulations ● Ensuring to follow OHS rules and regulation
Learning Conditions	Learning Materials ● Competency Based Learning Materials (CBLM) ● Hand-outs ● Audio Visuals ● Reference books ● Manuals Learning Facilities and infrastructure ● Classroom with adequate facilities ● Information Technology (IT) lab ● Library Materials ● Pen, artist pencil set, color pencil, butter paper, tracing paper and sketchbook Tools ● S Hand magnifying lens, drawing template kit and scale ruler Equipment ● Laptop/desktop, camera and color printer Software ● CAD PPE ● Workshop dress, safety boots, safety gloves, rain boots, dust mask and hand sanitizer

Underpinning skills	● Team work ● Communication ● Negotiation ● Creativity ● Problem solving ● Time management
Instructional Methodologies	The trainer shall use <i>inter alia</i>, the following instructional methods: ● Lecture ● Interactive discussion ● Demonstration ● Industrial visit/training ● Guided practice ● Group practice with project-based learning ● Individual practice with problem-based learning
Method of Assessment	The trainer shall use <i>inter alia</i>, the following assessment methods: ● Practical observation ● Oral/viva-voce ● Written test ● Assignment ● Project work ● Rubrics

COURSE	Landscape Technician BQF Certificate-3
DESCRIPTION	The trainee will be attached with relevant industries for OJT program. During the OJT, the trainees will be exposed to real life working environment where they are expected to develop technical skills and learn positive working attitudes including life skills.
OBJECTIVE	After completion of OJT, learners will be able to • Develop critical thinking, creativity, collaboration and communication skills • Adopt flexible and productive working attitude • Develop leadership skills • Apply initiatives • Develop social skills • Adopt OHS practices • Carryout basic floriculture practices • Apply fundamentals and elements of landscape design • Perform landscaping and maintenance
DURATION	420 Hours
CONDITIONS FOR OPERATION OF OJT	• The institute shall select relevant and reliable industry for OJT attachment • The trainee shall be attached in landscape designing related activity for at least 70% of the total OJT duration • The industry shall maintain daily attendance of the trainee • The trainee shall maintain OJT logbook as per the OJT guideline • The trainee is required to follow company's rule • The collaborating industry shall provide working facilities • The industry shall assess performance of trainees • The industry shall provide feedback in the logbook
EVALUATION	The industry shall evaluate the trainees on the trainee's performance through observation and use of logbook. The evaluation shall be done on the following aspects of trainees: ➤ Core skills ➤ Critical thinking ➤ Creativity ➤ Collaboration ➤ Communication ➤ Information literacy ➤ Media literacy ➤ Conversant to up-to-date technology ➤ Flexibility ➤ Leadership ➤ Initiative ➤ Productivity ➤ Social skills
REPORT	The trainee shall submit comprehensive report on OJT to the Institute

What is Competency-Based Curriculum (CBC)

- ✓ A competency-based curriculum is a framework or guide for the subsequent detailed development of competencies, associated methodologies, training and assessment resources.
- ✓ The CBC specifies the outcomes which are consistent with the requirements of the workplace as agreed through the industry or community consultations.
- ✓ CBC can be developed immediately when competency standards exist.
- ✓ When competency standards do not exist, curriculum developers need to clearly define the learning outcomes to be attained. The standard of performance required must be appropriate to industry and occupational needs through the industry/enterprise or specified client group consultations.

The CBC materials are available in both printed and electronic copies.

ANNEXES

Annex I: Time Distribution

Time Distribution (Regular course)					
Landscape Technician BQF Certificate-3					
Module Title	Learning outcomes	Tasks	Theory (Hours)	Practical (Hours)	Total (hours)
A: Carryout Basic Floriculture Practices	A1: Perform ornamental plant identification	A1.00 Introductory knowledge	6	0	6
		A1.01 Identify common ornamental trees	4	14	18
		A1.02 Identify common ornamental shrubs	2	16	18
		A1.03 Identify common ornamental herbs	6	18	24
		A1.04 Identify common ornamental climbers/vines	4	14	18
		A1.05 Identify common ornamental ferns and grasses	4	14	18
	Sub Total Duration		26	76	102
	A2: Perform nursery management	A2.01 Construct greenhouse and shed house	3	18	21
		A2.02 Prepare growing media	6	12	18
		A2.03 Perform plant propagation	6	18	24
		A2.04 Perform seedling care	6	12	18
	Sub Total Duration		21	60	81
	A3: Perform plant health management	A3.01 Perform pruning and thinning	4	18	22
		A3.02 Perform plant fertilization	6	6	12
		A3.03 Manage pests	4	14	18
		A3.04 Manage diseases	4	6	10
		A3.05 Manage weed	4	14	18
	Sub Total Duration		22	58	80
	Total Duration (A)		47	136	183
B: Perform Landscaping and Maintenance	B1:	B1.01 Install patios and walkways	4	18	22
		B1.02 Construct gazebos and rest spots	4	30	34
		B1.03 Install water features	4	30	34
		B1.04 Install deck and platforms	4	30	34
		B1.05 Construct retaining walls and fencings	4	18	22
		B1.06 Install planters	3	12	15
		B1.07 Install irrigation and drainage system	4	18	22
	Sub Total Duration		27	156	183
	B2:	B2.01 Prepare planting bed	3	12	15
		B2.02 Develop lawn	3	18	21
		B2.03 Perform plant selection	6	6	12
		B2.04 Perform root balling	4	14	18
		B2.05 Perform plantation	3	12	15
		B2.06 Perform mulching	3	6	9

	Sub Total Duration		22	68	90
	B3:	B3.01 Perform hardscape maintenance	3	12	15
		B3.02 Perform lawn maintenance	4	18	22
		B3.03 Perform plant care	4	18	22
		B3.04 Perform irrigation and drainage management	4	12	16
	Sub Total Duration		15	60	75
	Total Duration (B)		64	284	348
C. Apply fundamentals and elements of landscape design	C1: Perform hand sketching	C1.01 Identify elements of sketching	3	15	18
		C1.02 Sketch softscapes	3	21	24
		C1.03 Sketch hardscapes	3	21	24
		C1.04 Design a basic garden	3	33	36
	Sub Total Duration		12	90	102
	C2: Perform basic CAD programming	C2.01 Identify tools and features of CAD	6	12	18
		C2.02 Perform basic CAD operations	12	30	42
		C2.03 Design a basic garden	3	24	27
	Sub Total Duration		21	66	87
	C3: Perform pre-construction activities	C3.01 Perform basic site analysis	2	14	16
		C3.02 Prepare site map	2	20	22
		C3.03 Perform estimation and costing	2	20	22
	Sub Total Duration		6	54	60
	C4: Perform landscape designing	C4.01 Prepare residential landscape design	2	18	20
		C4.02 Prepare urban landscape design	2	18	20
		C4.03 Prepare commercial landscape design	2	18	20
	Sub Total Duration		6	54	60
	Total Duration (B)		45	264	309
	Grand Total Duration (Hours)		156	684	840

Annex II: Module Recognition**This is to verify that**

Mr/Ms.....

has completed module on

.....

Covering following learning outcomes:

1.
2.
3.

Instructor:**Head of the Department:**

.....

.....

Signature:**Signature:****Date:** / / (dd/mm/yyyy)
.....(dd/mm/yyyy)**Date:** / /**Head of the Institute:****Trained Assessor (Institute)/Exam OC:**

.....

.....

Signature:**Signature:****Date:** / ... / (dd/mm/yyyy)**Date:** / /(dd/mm/yyyy)

Annex III: Lesson Plan
Lesson Plan

Course Title:		NC Level:
Module Code:		Duration:
Module Title:		
Learning Outcome:		
Skill/Task/Topic:		
Terminal Performance Objective:		
<i>(Note: Write narrative statement extracted from TPO of Task Sheet)</i>		
Enabling Objectives (Related knowledge):		
<i>By the end of the lesson learners will be able to:</i>		
i) ii) iii)		
What (Content/Activity)	Who (T/L)	How (Methods/ Media)
Duration (Min.)	Questions	
Introduction:		
Main body		
Conclusion		
Projects/Problems:		

Instructional Resources Plan				
Skills/Task/Topic:				
No. of Trainees:				
Sl. No.:	Instructional materials/resources	Specifications	Qty.	Remarks
Prepared by :		Signature	Date:	
Revised by:		Signature	Date:	
Approved by:		Signature	Date:	

Task sheet

TS-1/4: Practical Plan

TS-1/4: Practical Plan			
Course Title:		N C Level:	
Module code:		Duration:	
Module Title			
Learning outcome			
Skills/Task Title:		Task no:	
Terminal Performance Objective: <i>Given:</i> <i>Cue:</i> <i>Who:</i> <i>What:</i> <i>Within:</i> <i>How well:</i> - - -			
Enabling Objectives (Related Skills): <i>By the end of a lesson, the learners will be able to:</i> i) ii) iii) iv)			
Activities	Who (T/L)	How (methods/ media)	Duration
Project/Assignment: 			

TS-2/4: Tool and Equipment required:

<i>Sl no.</i>	<i>Particulars</i>	<i>Specifications</i>	<i>Qty.</i>	<i>Remarks</i>

Training Materials required:

<i>Sl no.</i>	<i>Particulars</i>	<i>Specifications</i>	<i>Qty.</i>	<i>Rate</i>	<i>Amount</i>	<i>Remarks</i>

TS-3/4: Performance Guide**Skill/Task:****Date:**

Directions: Use the following performances criteria to rate the learner. Check YES/NO to indicate whether the learner performed each step as indicated or not?

Sl. No:	Steps	Yes	No

Note:

Critical steps: All * marked steps should be carried out very carefully. For a quality performance guide, all items should be checked "YES"

TS-4/4: Instruction and Drawing**General Instructions for Trainees**

- i)
- ii)

iii)

iv)

Drawing (if any)**Safety Precaution**

i)

ii)

iii)

Prepared by :**Signature****Date:****Revised By:****Signature****Date:****Approved by :****Signature****Date:**

Annex IV: Course Plan
Institutes letter head and Logo

(Trade)YEAR PLAN- _____Semester _____ (Year)

Prepared by:

Verified & Approved by:

Date:

Monthly/Weekly Plan

Month: Trade: Trainer:

Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Week 01							
Week 02							
Week 03							
Week 04							
Week 05							

Developed by: Approved by:

Date



For more information please contact:

Technical Trainers Training and Resource Center (TTTRC), DWPSD

P.O. Box153; Gelephu

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