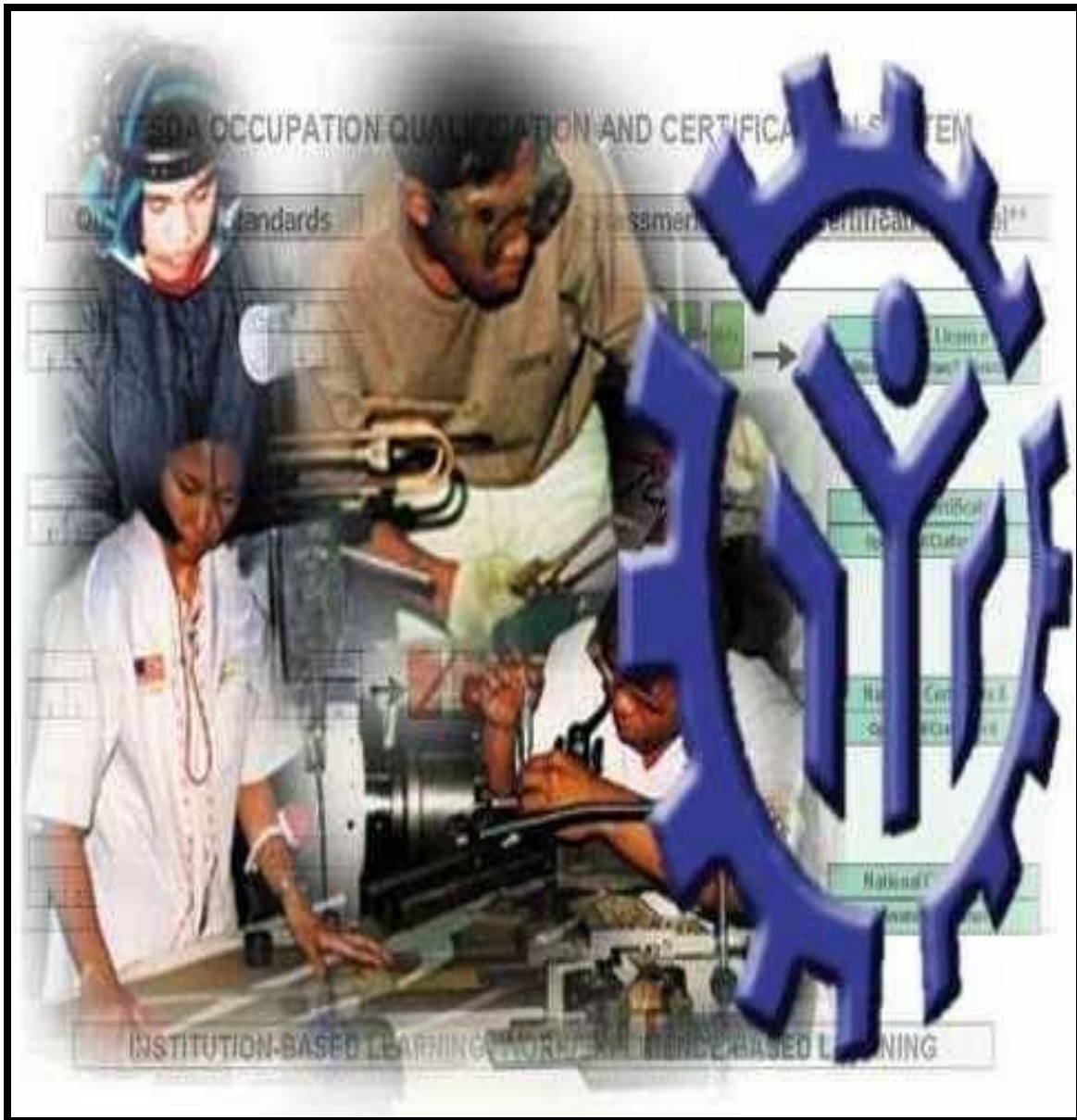


TRAINING REGULATIONS

LANDSCAPE INSTALLATION AND MAINTENANCE (SOFTSCAPE) NC II



AGRICULTURE AND FISHERY SECTOR

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY East East Service
Road, South Superhighway, Taguig City, Metro Manila

*Technical Education and Skills Development Act of 1994
(Republic Act No. 7796)*

Section 22, “Establishment and Administration of the National Trade Skills Standards” of the RA 7796 known as the TESDA Act mandates TESDA to establish national occupational skill standards. The Authority shall develop and implement a certification and accreditation program in which private industry group and trade associations are accredited to conduct approved trade tests, and the local government units to promote such trade testing activities in their respective areas in accordance with the guidelines to be set by the Authority.

The Training Regulations (TR) serves as basis for the:

1. Competency assessment and certification;
2. Registration and delivery of training programs; and
3. Development of curriculum and assessment instruments.

Each TR has four sections:

- Section 1 Definition of Qualification - refers to the group of competencies that describes the different functions of the qualification.
- Section 2 Competency Standards - gives the specifications of competencies required for effective work performance.
- Section 3 Training Standards - contains information and requirements in designing training program for certain Qualification. It includes curriculum design, training delivery; trainee entry requirements; tools and requirements; tools and equipment; training facilities and trainer's qualification.
- Section 4 National Assessment and Certification Arrangements - describe the policies governing assessment and certification procedure

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TRAINING REGULATIONS FOR LANDSCAPING NC II

SECTION 1 LANDSCAPING NC II QUALIFICATIONS

Landscape Installation and Maintenance NC II consists of competencies that a person must achieve in installing and maintaining landscape designs for all types of development projects including residential, commercial, industrial, institutional and open space areas. It also includes competency in growing plants and trees with a goal of creating beautiful and environmentally healthy landscapes. Workers at this level will be working under the supervision of landscape supervisor / manager.

This Qualification is packaged from the competency map of the Agriculture and Fishery Sector as shown in Annex A.

The Units of Competency comprising this Qualification include the following:

CODE	BASIC COMPETENCIES
500311105	Participate in Workplace Communication
500311106	Work in Team Environment
500311107	Practice Career Professionalism
500311108	Practice Occupational Health and Safety Procedures

CODE	COMMON COMPETENCIES
AGR321201	Apply safety measures in farm and nursery operations
AGR321202	Use farm and nursery tools and equipment
AGR321203	Perform estimation and calculations

CODE	CORE COMPETENCIES
	Installation / Construction
AGR611371	Provide site clearing and grubbing activities
AGR611372	Perform rough grading operations
AGR611373	Perform site preparation activities
AGR611374	Install plants at designated locations as designed
AGR611375	Install plant supports
	Maintenance
AGR611376	Trim and prune landscape plants
AGR611377	Perform weeding and cultivation
AGR611378	Apply fertilizer (Nutrition)
AGR611379	Water/Irrigate plants
AGR611380	Control and prevent plant pest and diseases
AGR611381	Provide plant support
AGR611382	Perform lawn grass maintenance
AGR611383	Perform re-planting activities
AGR611384	Collect, dispose and utilize organic waste

A person who has achieved this Qualification is competent to be:

Landscape Gardener

SECTION 2 COMPETENCY STANDARDS

This section gives the details of the contents of the basic, common and core units of competency required in Landscape Installation and Maintenance (Softscape) NC II.

BASIC COMPETENCIES

UNIT OF COMPETENCY : **PARTICIPATE IN WORKPLACE COMMUNICATION**

UNIT CODE : **500311105**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to gather, interpret and convey information in response to workplace requirements.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Obtain and convey workplace information	1.1 Specific and relevant information is accessed from appropriate sources 1.2 Effective questioning , active listening and speaking skills are used to gather and convey information 1.3 Appropriate medium is used to transfer information and ideas 1.4 Appropriate non- verbal communication is used 1.5 Appropriate lines of communication with supervisors and colleagues are identified and followed 1.6 Defined workplace procedures for the location and storage of information are used 1.7 Personal interaction is carried out clearly and concisely
2. Participate in workplace meetings and discussions	2.1 Team meetings are attended on time 2.2 Own opinions are clearly expressed and those of others are listened to without interruption 2.3 Meeting inputs are consistent with the meeting purpose and established protocols 2.4 Workplace interactions are conducted in a courteous manner 2.5 Questions about simple routine workplace procedures and matters concerning working conditions of employment are tasked and responded to 2.6 Meetings outcomes are interpreted and implemented
3. Complete relevant work related documents	3.1 Range of forms relating to conditions of employment are completed accurately and legibly 3.2 Workplace data are recorded on standard workplace forms and documents 3.3 Basic mathematical processes are used for routine calculations 3.4 Errors in recording information on forms/ documents are identified and properly acted upon 3.5 Reporting requirements to supervisor are completed according to organizational guidelines

RANGE OF VARIABLES

VARIABLE	RANGE
1. Appropriate sources	1.1 Team members 1.2 Suppliers 1.3 Trade personnel 1.4 Local government 1.5 Industry bodies
2. Medium	2.1 Memorandum 2.2 Circular 2.3 Notice 2.4 Information discussion 2.5 Follow-up or verbal instructions 2.6 Face-to-face communication
3. Storage	3.1 Manual filing system 3.2 Computer-based filing system
4. Forms	4.1 Personnel forms, telephone message forms, safety reports
5. Workplace interactions	5.1 Face-to-face interactions 5.2 Telephone conversation 5.3 Electronic and two-way radio communication 5.4 Written communication including electronic mail, memos, instruction and forms 5.5 Non-verbal communication including gestures, signals, signs and diagrams
6. Protocols	6.1 Observing meeting 6.2 Compliance with meeting decisions 6.3 Obeying meeting instructions

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Prepared written communication following standard format of the organization 1.2 Accessed information using communication equipment 1.3 Made use of relevant terms as an aid to transfer information effectively 1.4 Conveyed information effectively adopting the formal or informal communication
<p>2. Underpinning knowledge</p>	<ul style="list-style-type: none"> 2.1 Effective communication 2.2 Different modes of communication 2.3 Written communication 2.4 Organizational policies 2.5 Communication procedures and systems 2.6 Technology relevant to the enterprise and the individual's work responsibilities
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> 3.1 Follow simple spoken language 3.2 Perform routine workplace duties following simple written notices 3.3 Participate in workplace meetings and discussions 3.4 Complete work related documents 3.5 Estimate, calculate and record routine workplace measures 3.6 Basic mathematical processes of addition, subtraction, division and multiplication 3.7 Ability to relate to people of social range in the workplace 3.8 Gather and provide information in response to workplace requirements
<p>4. Resource implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Fax machine 4.2 Telephone 4.3 Writing materials 4.4 Internet
<p>5. Method of assessment</p>	<p>Competency MUST be assessed through:</p> <ul style="list-style-type: none"> 5.1 Direct Observation 5.2 Oral interview and written test
<p>6. Context of assessment</p>	<ul style="list-style-type: none"> 6.1 Competency may be assessed individually in the actual workplace or through accredited institution

UNIT OF COMPETENCY : **WORK IN TEAM ENVIRONMENT**

UNIT CODE : **500311106**

UNIT DESCRIPTOR : This unit covers the skills, knowledge and attitudes to identify role and responsibility as a member of a team.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Describe team role and scope	1.1. The <i>role and objective of the team</i> is identified from available <i>sources of information</i> 1.2. Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources
2. Identify own role and responsibility within team	2.1. Individual role and responsibilities within the team environment are identified 2.2. Roles and responsibility of other team members are identified and recognized 2.3. Reporting relationships within team and external to team are identified
3. Work as a team member	3.1. Effective and appropriate forms of communications used and interactions undertaken with team members who contribute to known team activities and objectives 3.2. Effective and appropriate contributions made to complement team activities and objectives, based on individual skills and competencies and <i>workplace context</i> 3.3. Observed protocols in reporting using standard operating procedures 3.4. Contribute to the development of teamwork plans based on an understanding of team's role and objectives and individual competencies of the members.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Role and objective of team	1.1 Work activities in a team environment with enterprise or specific sector 1.2 Limited discretion, initiative and judgment may be demonstrated on the job, either individually or in a team environment
2. Sources of information	2.1 Standard operating and/or other workplace procedures 2.2 Job procedures 2.3 Machine/equipment manufacturer's specifications and instructions 2.4 Organizational or external personnel 2.5 Client/supplier instructions 2.6 Quality standards 2.7 Occupational Health and Safety (OHS) and environmental standards
3. Workplace context	3.1 Work procedures and practices 3.2 Conditions of work environments 3.3 Legislation and industrial agreements 3.4 Standard work practice including the storage, safe handling and disposal of chemicals 3.5 Safety, environmental, housekeeping and quality guidelines

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Operated in a team to complete workplace activity 1.2 Worked effectively with others 1.3 Conveyed information in written or oral form 1.4 Selected and used appropriate workplace language 1.5 Followed designated work plan for the job 1.6 Reported outcomes
<p>2. Underpinning knowledge</p>	<ul style="list-style-type: none"> 2.1 Communication process 2.2 Team structure 2.3 Team roles 2.4 Group planning and decision making
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> 3.1 Communicate appropriately, consistent with the culture of the workplace
<p>4. Resource implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Access to relevant workplace or appropriately simulated environment where assessment can take place 4.2. Materials relevant to the proposed activity or tasks
<p>5. Method of assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 5.1 Observation of the individual member in relation to the work activities of the group 5.2 Observation of simulation and or role play involving the participation of individual member to the attainment of organizational goal 5.3. Case studies and scenarios as a basis for discussion of issues and strategies in teamwork
<p>6. Context of assessment</p>	<ul style="list-style-type: none"> 6.1 Competency may be assessed in workplace or in a simulated workplace setting 6.2 Assessment shall be observed while task are being undertaken whether individually or in group

UNIT OF COMPETENCY : **PRACTICE CAREER PROFESSIONALISM**

UNIT CODE : **500311107**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes in promoting career growth and advancement.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Integrate personal objectives with organizational goals	1.1 Personal growth and work plans are pursued towards improving the qualifications set for the profession 1.2 Intra- and interpersonal relationships is are maintained in the course of managing oneself based on performance evaluation 1.3 Commitment to the organization and its goal is demonstrated in the performance of duties
2. Set and meet work priorities	2.1 Competing demands are prioritized to achieve personal, team and organizational goals and objectives. 2.2 Resources are utilized efficiently and effectively to manage work priorities and commitments 2.3 Practices along economic use and maintenance of equipment and facilities are followed as per established procedures
3. Maintain professional growth and development	3.1 Trainings and career opportunities are identified and availed of based on job requirements 3.2 Recognitions are -sought/received and demonstrated as proof of career advancement 3.3 Licenses and/or certifications relevant to job and career are obtained and renewed

RANGE OF VARIABLES

VARIABLE	RANGE
1. Evaluation	1.1 Performance Appraisal 1.2 Psychological Profile 1.3 Aptitude Tests
2. Resources	2.1 Human 2.2 Financial 2.3 Technology 2.3.1 Hardware 2.3.2 Software
3. Trainings and career opportunities	3.1 Participation in training programs 3.1.1 Technical 3.1.2 Supervisory 3.1.3 Managerial 3.1.4 Continuing Education 3.2 Serving as Resource Persons in conferences and workshops
4. Recognitions	4.1 Recommendations 4.2 Citations 4.3 Certificate of Appreciations 4.4 Commendations 4.5 Awards 4.6 Tangible and Intangible Rewards
5. Licenses and/or certifications	5.1 National Certificates 5.2 Certificate of Competency 5.3 Support Level Licenses 5.4 Professional Licenses

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Attained job targets within key result areas (KRAs) 1.2 Maintained intra - and interpersonal relationship in the course of managing oneself based on performance evaluation 1.3 Completed trainings and career opportunities which are based on the requirements of the industries 1.4 Acquired and maintained licenses and/or certifications according to the requirement of the qualification
<p>2. Underpinning knowledge and attitudes</p>	<ul style="list-style-type: none"> 2.1 Work values and ethics (Code of Conduct, Code of Ethics, etc.) 2.2 Company policies 2.3 Company-operations, procedures and standards 2.4 Fundamental rights at work including gender sensitivity 2.5 Personal hygiene practices
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> 3.1 Appropriate practice of personal hygiene 3.2 Intra- and Interpersonal skills 3.3 Communication skills
<p>4. Resource implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Workplace or assessment location 4.2 Case studies/scenarios
<p>5. Method of assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 5.1 Portfolio Assessment 5.2 Interview 5.3 Simulation/Role-plays 5.4 Observation 5.5 Third Party Reports 5.6 Exams and Tests
<p>6. Context of assessment</p>	<ul style="list-style-type: none"> 6.1 Competency may be assessed in the work place or in a simulated work place setting

UNIT OF COMPETENCY : **PRACTICE OCCUPATIONAL HEALTH AND SAFETY PROCEDURES**

UNIT CODE : **500311108**

UNIT DESCRIPTOR : This unit covers the outcomes required to comply with regulatory and organizational requirements for occupational health and safety.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Identify hazards and risks	1.1 Safety regulations and workplace safety and hazard control practices and procedures are clarified and explained based on organization procedures 1.2 Hazards/risks in the workplace and their corresponding indicators are identified to minimize or eliminate risk to co-workers, workplace and environment in accordance with organization procedures 1.3 Contingency measures during workplace accidents, fire and other emergencies are recognized and established in accordance with organization procedures
2. Evaluate hazards and risks	2.1 Terms of maximum tolerable limits which when exceeded will result in harm or damage are identified based on threshold limit values (TLV) 2.2 Effects of the hazards are determined 2.3 OHS issues and/or concerns and identified safety hazards are reported to designated personnel in accordance with workplace requirements and relevant workplace OHS legislation
3. Control hazards and risks	3.1 Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace are consistently followed 3.2 Procedures for dealing with workplace accidents, fire and emergencies are followed in accordance with organization OHS policies 3.3 Personal protective equipment (PPE) is correctly used in accordance with organization OHS procedures and practices 3.4 Appropriate assistance is provided in the event of a workplace emergency in accordance with established organization protocol
4. Maintain OHS awareness	4.1 Emergency-related drills and trainings are participated in as per established organization guidelines and procedures 4.2 OHS personal records are completed and updated in accordance with workplace requirements

RANGE OF VARIABLES

VARIABLE	RANGE
1. Safety regulations	May include but are not limited to: 1.1 Clean Air Act 1.2 Building code 1.3 National Electrical and Fire Safety Codes 1.4 Waste management statutes and rules 1.5 Philippine Occupational Safety and Health Standards 1.6 DOLE regulations on safety legal requirements 1.7 ECC regulations
2. Hazards/Risks	May include but are not limited to: 2.1 Physical hazards – impact, illumination, pressure, noise, vibration, temperature, radiation, landslide, structure collapse, tree collapse, drowning, fire 2.2 Biological hazards- bacteria, viruses, plants, parasites, mites, molds, fungi, insects 2.3 Chemical hazards – dusts, fibers, mists, fumes, smoke, gasses, vapors 2.4 Ergonomics 2.4.1. Psychological factors – over exertion/ excessive force, awkward/static positions, fatigue, direct pressure, varying metabolic cycles 2.4.2. Physiological factors – monotony, personal relationship, work out cycle
3. Contingency measures	May include but are not limited to: 3.1 Evacuation 3.2 Isolation 3.3 Decontamination 3.4 Calling designated emergency personnel
4. PPE	May include but are not limited to: 4.1 Mask 4.2 Gloves 4.3 Goggles 4.4 Hair Net/cap/bonnet 4.5 Face mask/shield 4.6 Ear muffs 4.7 Apron/Gown/coverall/jump suit 4.8 Anti-static suits
5. Emergency-related drills and training	5.1 Fire drill 5.2 Earthquake drill 5.3 Basic life support/CPR 5.4 First aid 5.5 Spillage control 5.6 Decontamination of chemical and toxic 5.7 Disaster preparedness/management
6. OHS personal records	6.1 Medical/Health records 6.2 Incident reports 6.3 Accident reports 6.4 OHS-related training completed

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Explained clearly established workplace safety and hazard control practices and procedures 1.2 Identified hazards/risks in the workplace and its corresponding indicators in accordance with company procedures 1.3 Recognized contingency measures during workplace accidents, fire and other emergencies 1.4 Identified terms of maximum tolerable limits based on threshold limit value- TLV. 1.5 Followed Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace 1.6 Used Personal Protective Equipment (PPE) in accordance with company OHS procedures and practices 1.7 Completed and updated OHS personal records in accordance with workplace requirements
<p>2. Underpinning knowledge and attitudes</p>	<ul style="list-style-type: none"> 2.1 OHS procedures and practices and regulations 2.2 PPE types and uses 2.3 Personal hygiene practices 2.4 Hazards/risks identification and control 2.5 Threshold Limit Value -TLV 2.6 OHS indicators 2.7 Organization safety and health protocol 2.8 Safety consciousness 2.9 Health consciousness
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> 3.1 Practice of personal hygiene 3.2 Hazards/risks identification and control skills 3.3 Interpersonal skills 3.4 Communication skills
<p>4. Resource implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Workplace or assessment location 4.2 OHS personal records 4.3 PPE 4.4 Health records
<p>3. Method of assessment</p>	<p>Competency MUST be assessed through:</p> <ul style="list-style-type: none"> 5.1 Portfolio Assessment 5.2 Interview 5.3 Case Study/Situation
<p>4. Context of assessment</p>	<ul style="list-style-type: none"> 6.1 Competency may be assessed in the work place or in a simulated work place setting

COMMON COMPETENCIES

UNIT TITLE : **APPLY SAFETY MEASURES IN FARM AND NURSERY OPERATIONS**

UNIT CODE : **AGR321201**

UNIT DESCRIPTOR: This unit covers the knowledge, skills and attitudes required to perform safety measures effectively and efficiently. It includes identifying areas, equipment, tools, materials, time and place in performing safety measures.

ELEMENT	PERFORMANCE CRITERIA
	<i>Italicized terms</i> are elaborated in the Range of Variables
1. Determine areas of concern for safety measures	1.1 Work tasks are identified in line with farm operations 1.2 Place for safety measures are determined in line with farm operations 1.3 Time for safety measures are determined in line with farm operations 1.4 Appropriate equipment, tools, materials and outfits are prepared in line with job requirements
2. Apply appropriate safety measures	2.1 Equipment, tools and materials are used according to specifications and procedures 2.2 Outfits are worn according to farm requirements 2.3 Effectivity/shelf life/expiration of materials are strictly observed 2.4 Emergency procedures are known and followed to ensure a safework requirement 2.5 Hazards in the workplace are identified and reported in line with farm guidelines
3. Safekeep/dispose tools, materials and outfit	3.1 Used tools and outfit are cleaned after use and stored in designated areas 3.2 Unused materials are properly labeled and stored according to manufacturers recommendation and farm requirements 3.3 Waste materials are disposed according to manufacturers, government and farm requirements

RANGE OF VARIABLES

VARIABLE	RANGE
1. Work tasks	Work task may be selected from any of the following sectors: 1.1 Aquaculture 1.2 Animal Production 1.3 Crop Production 1.4 Post-harvest 1.5 Handling and delivery 1.6 Agri-marketing 1.7 Farm Equipment
2. Place	2.1 Animal pens, cages, barns 2.2 Fish ponds, cages 2.3 Stock room/storage areas/warehouse 2.4 Field/farm/orchard 2.5 Greenhouses
3. Time	3.1 Vaccination and medication period 3.2 seeding, sodding, planting, transplanting, tree-root cutting 3.3 Irrigation 3.4 Fertilizer and pesticides application 3.5 Feed mixing and feeding 3.6 Harvesting and hauling 3.7 Cleaning, sanitizing and disinfecting 3.8 Dressing, butchering and castration
4. Emergency procedures	4.1 Location of first aid kit 4.2 Evacuation 4.3 Agencies contact. 4.4 Farm emergency procedures

<p>5. Equipment /Tools, materials and outfits</p>	<p>5.1 Equipment / Tools</p> <ul style="list-style-type: none"> 5.1.1 Wrenches 5.1.2 Screw driver 5.1.3 Pliers 5.1.4 Shovels 5.1.5 Picks 5.1.6 Pruning shears 5.1.7 Bolos 5.1.8 Buggies 5.1.9 Wheelbarrows 5.1.10 Chainsaws 5.1.11 Tree Spader 5.1.12 Forklift 5.1.13 Crane 5.1.14 Payloader 5.1.15 Flatbed Truck 5.1.16 Tree Root cutters <p>5.2 Materials</p> <ul style="list-style-type: none"> 5.2.1 Bottles 5.2.2 Plastic 5.2.3 Bags 5.2.4 Syringe 5.2.5 Ropes 5.2.6 Rubber hoses and nozzles <p>5.3 Outfit</p> <ul style="list-style-type: none"> 5.3.1 Masks 5.3.2 Safety harness 5.3.3 Gloves 5.3.4 Boots 5.3.5 Overall coats 5.3.6 Hard hat / helmet 5.3.7 Eye goggles
<p>6. Waste materials</p>	<ul style="list-style-type: none"> 6.1 Animal manure 6.2 Waste water 6.3 Syringes 6.4 Unused farm chemicals e.g. pesticides, chemicals, fertilizers 6.5 Expired reagents 6.6 Dead animals 6.7 Dead plants 6.8 Fallen trees 6.9 Yard litter 6.10 Landscape debris
<p>7. Hazards</p>	<ul style="list-style-type: none"> 7.1 Chemical 7.2 Electrical 7.3 Falls 7.4 Floods 7.5 Gas Explosions 7.6 Fire

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Determined areas of concern for safety measures 1.2 Applied appropriate safety measures according to industry requirements 1.3 Prepared tools, materials and outfit needed 1.4 Performed proper disposal of used materials 1.5 Safe kept/cleaned tools, materials and outfit in designated facilities
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> 2.1 Safety Practices <ul style="list-style-type: none"> 2.1.1 Implementation of regulatory controls and policies relative to treatment of area and application of chemicals 2.1.2 Proper disposal of waste materials 2.2 Codes and Regulations <ul style="list-style-type: none"> 2.2.1 Compliance to health program of DOH and DENR 2.2.2 Hazard identification 2.2.3 Emergency procedures 2.3 Tools & Equipment: Uses and Specification <ul style="list-style-type: none"> 2.3.1 Masks, gloves, boots, overall coats for health protection 2.4 Maintenance <ul style="list-style-type: none"> 2.4.1 Regular check-up and repair of tools, materials and outfit before and after use
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Ability to recognize effective tools, materials and outfit 3.2 Ready skills required to read labels, manuals and other basic safety information
<p>4. Method of Assessment</p>	<p>Competency in this unit must be assessed through:</p> <ul style="list-style-type: none"> 4.1 Practical demonstration 4.2 Third Party Report
<p>5. Resource Implications</p>	<ul style="list-style-type: none"> 5.1 Farm location 5.2 Tools, equipment and outfits appropriate in applying safety measures
<p>6. Context of Assessment</p>	<ul style="list-style-type: none"> 6.1 Assessment may occur in the workplace or in a simulated workplace or as part of a team under limited supervision

UNIT OF COMPETENCY : **USE FARM AND NURSERY TOOLS AND EQUIPMENT**

UNIT CODE : **AGR321202**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to use farm and nursery tools and equipment. It includes selection, operation and preventive maintenance of farm and nursery tools and equipment.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Select and use farm tools	1.1 Identified appropriate farm tools according to requirement/use 1.2 Farm tools are checked for faults and defective tools reported in accordance with farm procedures 1.3 Appropriate tools and equipment are safely used according to job requirements and manufacturers conditions
2. Select and operate farm equipment	2.1 Identify appropriate <i>farm and nursery equipment</i> 2.2 Instructional manual of the farm tools and equipment are carefully read prior to operation 2.3 <i>Pre-operation check-up</i> is conducted in line with manufacturers manual 2.4 Faults in farm equipment are identified and reported in line with farm procedures 2.5 Farm equipment used according to its function 2.6 Followed safety procedures
3. Perform preventive maintenance	3.1 Tools and equipment are cleaned immediately after use in line with farm procedures 3.2 Routine check-up and maintenance are performed 3.3 Tools and equipment are stored in designated areas in line with farm procedures

RANGE OF VARIABLES

VARIABLE	RANGE
1. Farm and nursery equipment	1.1. Engine 1.2. Pumps 1.3. Generators 1.4. Sprayers 1.5. Tree Spader 1.6. Forklift 1.7. Crane 1.8. Payloader 1.9. Flatbed Truck 1.10. Tree Root cutters 1.11. Irrigation System
2. Farm and nursery tools	2.1 Sickle 2.2 Cutters 2.3 Weighing scales 2.4 Hand tools 2.5 Measuring tools 2.6 Garden tools 2.7 Shovels 2.8 Picks 2.9 Pruning shears 2.10 Wheelbarrows 2.11 Buggies 2.12 Rubber hoses and nozzles 2.13 Chainsaws 2.14 Bolos
3. Pre-operation check-up	3.1 Tires 3.2 Brake fluid 3.3 Fuel 3.4 Water 3.5 Oil 3.6 Lubricants 3.7 Battery

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Correctly identified appropriate farm and nursery tools and equipment</p> <p>1.2 Operated farm and nursery equipment according to manual specification</p> <p>1.3 Performed preventive maintenance</p>
<p>2. Underpinning Knowledge and Attitudes</p>	<p>2.1 Safety Practices</p> <p>2.1.1 Ideal good work habits to demonstrate to workers easy and safety standards during operation of farm equipment</p> <p>2.2 Codes and Regulations</p> <p>2.2.1 Environmental Compliance Certificate (ECG)</p> <p>2.2.2 Effective work supervision in the operations of farm equipment</p> <p>2.3 Tools & Equipment: Uses and Specification</p> <p>2.3.1 Knowledge in calibrating and use of equipment</p> <p>2.3.2 Safety keeping of equipments every after use</p> <p>2.4 Maintenance</p> <p>2.4.1 Regular upkeep of equipments</p> <p>2.4.2 Preventive maintenance skills</p> <p>2.5 Values</p> <p>2.5.1 Positive outlook towards work</p> <p>2.5.2 Possesses pre-emptive/anticipatory skills</p>
<p>3. Underpinning Skills</p>	<p>3.1 Ability to recognized defective farm equipment</p> <p>3.2 Perform proper management practices of safety measures</p>
<p>4. Method of Assessment</p>	<p>Competency in this unit must be assessed through:</p> <p>4.1 Direct observation</p> <p>4.2 Practical demonstration</p> <p>4.3 Third Party Report</p>
<p>5. Resource Implications</p>	<p>5.1 Service/operational manual of farm tools and equipment</p> <p>5.2 Tools and equipment</p> <p>5.3 Farm and nursery implements</p>
<p>6. Context of Assessment</p>	<p>6.1 Assessment may occur in the workplace or in a simulated workplace or as part of a team under limited supervision</p>

UNIT OF COMPETENCY : **PERFORM ESTIMATION AND BASIC CALCULATION**

UNIT CODE : **AGR321203**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to perform basic workplace calculations.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Perform estimation	1.1 Job requirements are identified from written or oral communications 1.2 Quantities of materials and resources required to complete a work task are estimated 1.3 The time needed to complete a work activity is estimated 1.4 Accurate estimate for work completion are made 1.5 Estimate of materials and resources are reported to appropriate person
2. Perform basic workplace calculation	2.1 Calculations to be made are identified according to job requirements 2.2 Correct method of calculation identified 2.3 System and units of measurement to be followed are ascertained 2.4 Calculation needed to complete work tasks are performed using the four basic process of addition, division, multiplication and subtraction 2.5 Calculate whole fraction, percentage and mixed when are used to complete the instructions 2.6 Number computed in self checked and completed for alignment

RANGE OF VARIABLES

VARIABLE	RANGE
1. Calculation	1.1 Quantity of feeds 1.2 Amount of fertilizer 1.3 Amount of medicines 1.4 Amount of soil-mix media 1.5 Amount of Irrigation water-both storage and consumption.
2. Method of calculation	2.1 Addition 2.2 Subtraction 2.3 Multiplication 2.4 Division 2.5 Ratio and proportion
3. System of measurement	3.1 English 3.2 Metric
4. Units of measurement	4.1 Area 4.2 Volume 4.3 Weight

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Performed estimation 1.2 Performed basic workplace calculation 1.3 Applied corrective measures as maybe necessary
2. Underpinning Knowledge and Attitudes	2.1 Mathematics 2.1.1 Basic mathematical operations 2.1.2 Percentage and ratios 2.1.3 Unit Conversion 2.1.4 Basic accounting principles and procedures 2.1.4.1 Production cost 2.1.4.2 Sales 2.1.4.3 Accounts receivables/payables 2.2 Systems, Processes and Operations 2.2.1 Knowledge in different management practices and operational procedures 2.3 Values 2.3.1 Safety consciousness 2.3.2 Time consciousness and management 2.3.3 Cost consciousness 2.3.4 Precision
3. Underpinning Skills	3.1 Ability to perform basic calculation 3.2 Communicate effectively
4. Method of Assessment	Competency in this unit must be assessed through: 4.1 Practical demonstration 4.2 Written examination
5. Resource Implications	5.1 Relevant tools and equipment for basic calculation 5.2 Recommended data
6. Context of Assessment	6.1 Assessment may occur in the workplace or in a simulated workplace or as part of a team under limited supervision

CORE COMPETENCIES

UNIT OF COMPETENCY: PERFORM SITE CLEARING AND GRUBBING ACTIVITIES

UNIT CODE : AGR611371

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to clear site and disposed wastes.

ELEMENT	PERFORMANCE CRITERIA
	<i>Italicized terms</i> are elaborated in the Range of Variables
1. Clear site	1.1 <i>Unwanted vegetation and debris</i> are removed in accordance with the instructions 1.2 Trees designed to be retained are protected in accordance with standards. 1.3 Site is cleared using prescribed tools and equipment 1.3 Task is performed using appropriate safety protective devices
2. Dispose waste	2.1 Wastes are gathered and disposed in accordance with environmental standards 2.2 Task is performed using appropriate <i>safety protective devices</i>
3. Perform post-clearing site and grubbing activities	3.1 Tools and equipment are cleaned, maintained and stored according to established standard practices 3.2 Maintenance of clean and safe area is undertaken throughout and on completion of work 3.3 Work output is reported to concerned person or authority according to industry practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Unwanted vegetation and debris	May include but are not limited to: 1.1 Grasses 1.2 Shrubs trees and tree stumps 1.3 Stones 1.4 Construction debris
2. Safety protective devices	May include but are not limited to: 2.1 Ear mask 2.2 Goggles 2.3 Gloves 2.4 Hard hat 2.5 Safety belts/harness 2.6 Safety shoes 2.7 Rain Boots 2.8 Safety apron 2.9 Reflectorized vest

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Cleared site of unwanted materials and debris 1.2 Disposed wastes 1.3 Used appropriate tools, equipment and PPE 1.4 Cleaned, maintained and stored tools and equipment 1.5 Maintained and cleaned work are 1.6 Observed OHS practices
2. Underpinning Knowledge	2.1 Functions and uses of tools, equipment and PPE 2.2 Procedures and techniques in site clearing 2.3 Basic Plan Reading 2.4 Knowledge on debris recyclable materials
3. Underpinning skills	3.1 Using of tools, equipment and PPE 3.2 Communication skills
4. Resource Implications	The following resources MUST be provided: 4.1 Tools, equipment and PPE 4.2 Site identified for the activity 4.3 Designed Plan / Instructions (Oral or Written)
5. Method of Assessment	Competency may be assessed through: 5.1 Direct Observation with Oral Questioning 5.3 Interview 5.4 Portfolio
6. Context of Assessment	6.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

UNIT OF COMPETENCY: PERFORM ROUGH GRADING OPERATIONS

UNIT CODE : AGR611372

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to perform rough grading operations for drainage and erosion control.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Rough grade site	1.1 Rough site grading is performed to achieve desired elevations or slopes by cut or fill in accordance with the designed grading plans, specifications or instructions. 1.2 Site is graded roughly using prescribed tools and equipment in accordance with standards of rough grading practice. 1.3 Task is performed using appropriate personal protective equipment (PPE)
2. Provide surface drainage and shape or form the land	2.1 Site is graded to drain surface water and to shape the land in accordance with the designed grading plans and instructions 2.2 Tasks is performed using prescribed tools, equipment and personal protective equipment (PPE)
3. Perform post-rough grading operations	3.1 Newly graded site is protected against human, animal and mechanical disturbance, and other potential hazards like inclement weather 3.2 Site grading tools and equipment are cleaned, maintained and stored according to established standard practices 3.3 Maintenance of clean and safe area is undertaken throughout and upon completion of work 3.4 Work output is reported to concerned person or authority according to industry practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Personal Protective Equipment (PPE)	May include but are not limited to: 1.1. Goggles 1.2. Gloves 1.3. Safety belts, shoes, etc. 1.4. Reflectorized vest
2 Site Grading tools	2.1 Picks 2.2 Shovels 2.3 Leveling tools 2.4 Compass 2.5 Distance Measuring tools, nylon wires, stakes 2.6 Wheelbarrows, buggies, rubber hoses, etc 2.7 Ground labeling tools

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Rough graded site to designed elevations or slopes 1.2 Provided surface drainage and shape or formed the land 1.3 Performed tasks using prescribed tool, equipment and appropriate personal protective equipment (PPE) 1.4 Cleaned, maintained and stored tools and equipment 1.5 Cleaned and maintained work area 1.6 Observed OHS practices
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 Functions and uses of tools 2.2 Basic arithmetic 2.3 Concept of time 2.4 First-aid treatment for minor injuries
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Using hand tools 3.2 Basic communication skills
<p>4. Resource Implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Actual area for the activity 4.2 Tools and materials related to tasks to be performed 4.3 Designed Plan / Instructions (Oral or written)
<p>5. Method of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 5.1 Direct Observation with Oral Questioning 5.2 Interview 5.3 Portfolio
<p>6. Context of Assessment</p>	<ul style="list-style-type: none"> 6.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

UNIT OF COMPETENCY: PERFORM SITE PREPARATION ACTIVITIES

UNIT CODE : AGR611373

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to perform site preparation activities for landscape construction.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Cultivate land	1.1 Cultivate/till/dig land is performed in accordance with the designed plans, specifications or instructions. 1.2 Land is cultivated using prescribed tools and equipment 1.3 Tasks are performed using appropriate personal protective equipment (PPE)
2. Remove construction debris and other materials	2.1 Construction debris and other materials are gathered and removed from site in accordance with the designed plans, specifications or instructions. 2.2 Gathered construction debris are disposed at designated area 2.3 Tasks are performed using prescribed tools, equipment and safety protective devices
3. Add amended soil/soil mix to cultivated land	3.1 Add/incorporate amended soil/soil mix to cultivated land in accordance with ANSI as well as standard general nursery specifications or instructions 3.2 Tasks are performed using prescribed tools and equipment and appropriate safety protective devices
4. Fine grade and compact cultivated land	4.1 Cultivated land is fine graded and compacted in accordance with the design specifications as well as standard general grading and compaction specifications or instructions. 4.2 Pre-planting watering is performed as instructed 4.3 Tasks are performed using prescribed tools, equipment and appropriate safety protective devices
5. Perform post-land preparation activities	5.1 Tools and equipment are cleaned, maintained and stored according to established standard practices 5.2 Maintenance of clean and safe area is undertaken throughout and on completion of work 5.3 Work output is reported to concerned person or authority according to industry practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Personal Protective Equipment	May include but are not limited to: 1.1 Goggles 1.2 Gloves 1.3 Hard hat 1.4 Safety shoes 1.5 Reflectorized vest
2. Construction debris	May include but are not limited to: 2.1 Cement, metals, gravel, etc. 2.2 Stones/rocks, hard fan, adobe, etc. 2.3 Tree stumps 2.4 Broken bottles, glass, etc. 2.5 Garbage
3. Compacted	Soil is compacted by means of: 3.1 Water compaction (Pre-planting watering) 3.2 Roller (Manual or machine operated) 3.3 Tamper or mechanical compactor

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Cultivated land 1.2 Removed construction debris and materials 1.3 Added amended soil/mixed soil to cultivate land 1.4 Fine graded and compacted cultivated land 1.5 Performed tasks using prescribed tools, equipment and appropriate personal protective equipment (PPE) 1.6 Cleaned, maintained and stored tools and equipment 1.7 Cleaned and maintained work area 1.6 Observed OHS practices
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 Functions and uses of tools and equipment 2.2 Familiarity with materials used 2.3 Basic arithmetic 2.4 Concept of time 2.5 First-aid treatment for minor injuries
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Using of handtools and measuring instruments 3.2 Performing land leveling 3.3 Basic communication skills
<p>4. Resource Implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Actual area for the activity 4.2 Tools, materials and equipment related to tasks to be performed 4.3 Instructions (Oral or written)
<p>5. Method of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 5.1 Direct Observation with Oral Questioning 5.2 Interview 5.3 Portfolio
<p>6. Context of Assessment</p>	<p>6.1. Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.</p>

UNIT OF COMPETENCY: INSTALL PLANTS AT DESIGNATED LOCATIONS AS DESIGNED

UNIT CODE : AGR611374

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to perform installing plants at designated locations as shown in the planting plan or as specified.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Inspect plants	1.1 Only specified species, variety, quality, size, etc. shall be delivered in accordance with the planting plan and plant list 1.2 Delivered plants are inspected in accordance with the plant list or planting plan 1.3 Rejected plants delivered shall be removed from the site immediately after inspection
2. Lay-out or stake out plant	2.1 Exact location of the plants is marked on the ground in accordance with the planting plan, specifications and/or instructions 2.2 Appropriate plants is distributed and marked on the ground as indicated in the planting plan or in accordance with instructions
3. Excavate hole/pit (Excluding lawn grass/turf, aquatic plants, orchids, etc.)	3.1 Excavate/dig hole/pit at designated mark in accordance with specifications or instructions 3.2 Tasks are performed using prescribed tools, equipment and appropriate personal protective equipment (PPE)
4. Install plants (Excluding large trees with 15cm or more trunk height, lawn grass/turf, aquatic plants, orchids, etc.)	4.1 Plants are removed from container according to prescribed instructions and techniques 4.2 Extra long primary roots are cut and not wound around the root ball 4.3 Pre-planting watering of excavated holes is performed (thoroughly saturated) according to accepted standard techniques and procedures 4.4 Plant is installed in accordance with landscape specifications and standards, detailed drawings and instructions 4.5 Plants are set so that the soil level of plant in container shall be the same as the finish grade of the hole 4.6 Plants are handled to avoid breakage of root ball, trunk/stem, branches and scraping of bark 4.7 Plants are set plumb and held in position until sufficient soil has been firmly placed around and under the root ball 4.8 Lightly tamp the soil around the base of the plant to eliminate air pockets and to hold the plant firmly and plumb to the soil

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
5. Apply fertilizer	5.1 Fertilizers are selected in conformity with the manufacturer's guaranteed analysis, labels or as specified 5.2 Fertilizers and/or rooting hormones are applied to newly installed plants in accordance with the standard landscaping specifications or instructions 5.3 Fertilizers are applied to large trees and palms, when the planting hole/pit is half-filled with amended soil in accordance with the instructions 5.4 Tasks are performed using prescribed tools, equipment and appropriate personal protective equipment (PPE)
6. Water plants	6.1 Watering basin / bern is made around each plant and in accordance with instructions or specifications 6.2 Watering is performed after planting to thoroughly wet the root ball and surrounding ground in accordance with standard watering techniques 6.3 Tasks are performed using prescribed tools, equipment and appropriate personal protective equipment (PPE)
7. Apply / Install mulch	7.1 Materials for mulching is selected and prepared in accordance with the standard landscape specifications, instructions or detailed drawing 7.2. Area / ground where mulch will be applied is prepared in accordance with the specifications, instructions or detailed drawing 7.3. Mulch is applied in accordance with the specifications, instructions or detailed drawing 7.4. Tasks are performed using prescribed materials and tools and equipment 7.5. Tasks are performed using appropriate safety protective safety protective devices 7.6. Area is restored and cleaned as per standard operating procedures
8. Perform post-landscape installation activities	8.1 Tools and equipment are cleaned, maintained and stored according to established standard practices 8.2 Maintenance of clean and safe area is undertaken throughout and on completion of work 8.3 Work output is reported to concerned person or authority according to industry practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Plants	Commonly classified plants in landscaping may include but are not limited to: 1.1 Lawn grass and turf (excluding specialized golf course grass) 1.2 Groundcover and vines 1.3 Shrubs, herbs, small palms, annuals, etc. 1.4 Trees, large palms, large bamboo, etc. 1.5 Aquatic plants, orchids, ferns, etc. 1.6 Succulents
2. Inspected	Plant inspected may include but are not limited to: 2.1 Species 2.2 Variety 2.3 Number 2.4 Size 2.5 Plant condition
3. Mark	3.1 Spray paint (red or orange color preferred) 3.2 Bamboo/wood sticks/stakes 3.3 Lime dust 3.4 Specified plants directly as marker
4. Personal Protective Equipment (PPE)	May include but are not limited to: 4.1 Gloves 4.2 Gas mask 4.3 Hard hat 4.4 Safety belts/harness 4.5 Safety shoes 4.6 Safety apron 4.7 Rain boots 4.8 Reflectorized vest
5. Fertilizers	5.1 Fertilizers forms 5.1.1 Soluble crystals 5.1.2 Dray granules 5.1.3 Organic fish meal 5.1.4 Controlled (slow) – release pellets 5.2 Fertilizers types 5.2.1 Organic 5.2.2 Chemical
6. Watering	6.1 By hand (manually) using rubber/plastic hose attached to a hose bibb or faucet or quick coupling valve as spice of water from the main supply 6.2 By irrigation system operated manually or automatically by controller 6.3 Water tank truck as source of water supply provided with dispenser connected to a hose directly or water is collected in containers (sprinkler, pail, etc.) to water the plants
7. Mulch	7.1. Shreaded bark / branch 7.2. Straw or equal 7.3 Gravel /stone / brick chips 7.4. Coconut husk chips 7.5. Plastic sheet or Jute mesh

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Inspected plants 1.2 Laid-out or stake-out plants 1.3 Excavated hole/pit at designated marks 1.4 Installed plants 1.5 Applied fertilizers 1.6 Watered plants 1.7 Performed tasks using prescribed tools, equipment and personal protective equipment (PPE) 1.8 Cleaned, maintained and stored tools and equipment 1.9 Cleaned and maintained work area 1.10 Observed OHS practices
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 Basic Plan Reading 2.2 Functions of tools, materials and equipment 2.3 Familiarity with plants (i.e. name, parts, handling and care) 2.4 Basic arithmetic 2.5 Basic communication skills 2.6 Basic first-aid treatment 2.7 Types, characteristics and methods of application of fertilizers 2.8 Frequency and dosage of fertilizers 2.9 Hygiene practices and plant health principles 2.10 Procedures and techniques in watering/irrigation 2.10 Values <ul style="list-style-type: none"> 2.10.1 Diligence 2.10.2 Time consciousness
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Using tools and equipment 3.2 Applying planting techniques 3.3 Using the right species, size and quality of plants 3.4 Communication skills (verbal or written) in receiving instructions
<p>4. Resource Implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Workplace area 4.2 Supplies, materials, tools and equipment needed to perform the tasks 4.3 Instructions (Oral or Written)
<p>5. Method of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 5.1 Direct Observation with Oral Questioning 5.2 Interview 5.3 Portfolio
<p>6. Context of Assessment</p>	<ul style="list-style-type: none"> 6.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions

UNIT OF COMPETENCY: INSTALL PLANT SUPPORT

UNIT CODE : AGR611375

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to install plant support immediately after planting.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Install stakes or staking	1.1 Materials for staking are selected and prepared in accordance with the standard landscape specifications, instructions or detailed drawing 1.2 Stakes are installed in accordance with the specifications, instructions or detailed drawings 1.3 Paints are applied to all wooden and other visible parts in accordance with the specifications, instructions or detailed drawing 1.4 Tasks in installing stakes are performed using appropriate safety protective devices and prescribed materials, tools and equipment. 1.5 Area is cleaned and restored as per industry standard operating procedures
2. Install plant guys or guying	2.1 Materials for guying are selected and prepared in accordance with the standard landscape specifications, instructions or detailed drawing 2.2. Plant guys are installed in accordance with the specifications, instructions or detailed drawing 2.3. Warning signs are installed in areas where guys are placed in accordance with specifications, instructions or detailed drawing 2.4. Tasks in installing plant guys are performed using appropriate safety protective devices and prescribed materials, tools and equipment. 2.5. Area is cleaned and restored as per industry standard operating procedures
3. Install plant props / braces or proping bracing	3.1 Materials for plant props / braces are selected and prepared in accordance with the standard landscape specifications, instructions or detailed drawing 3.2. Plant props / braces are installed in accordance with the specifications, instructions or detailed drawings 3.3. Paints are applied to all wooden and other visible parts in accordance with the specifications, instructions or detailed drawing 3.4. Tasks in installing plant props or braces are performed using appropriate safety protective devices and prescribed materials, tools and equipment. 3.5. Area is cleaned and restored as per industry standard operating procedures

RANGE OF VARIABLES

VARIABLE	RANGE
1. Materials for staking	May include but not limited to: 1.1 Wooden tree stakes 1.2 Bamboo stakes 1.3 Stake ponder 1.4 Garden hose 1.5 Coated wire, plant tie or used nylon stocking
2. Materials for guying	May include but not limited to : 2.1 Guying anchor / duck-billed soil anchor 2.2 Reinforcing rod 2.3 Wires / ropes / metal cables 2.4 Garden hose
3. Materials for plant props / braces	May include but not limited to: 3.1 Metal plant props 3.2 Wood / floor board 3.3 Screws 3.4 Metal braces / Grid plant brace

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Identified and used materials and tools in installing plant support 1.2 Installed stakes, guys, props and braces efficiently and aesthetically acceptable 1.4 Exhibited safety practices and procedures in installing plant support
2. Underpinning Knowledge and Attitude	2.1 Functions, uses and basic maintenance of tools 2.2 Different types of plant supports 2.3 Basic knowledge on arithmetic 2.4 Values (Diligence, Time and Cost-consciousness, Hygiene, Systematic and Organized)
3. Underpinning Skills	3.1 Basic carpentry works / plumbing 3.2 Use of appropriate tools and PPE 3.3 Communication skills
4. Resource Implications	The following resources MUST be provided: 4.1 Garden with newly installed large trees and palms 4.2 Carpentry tools 4.3 Materials (G.I. Wires, Cables, Ropes, Stakes, Pegs / Pins, etc.)
5. Method of Assessment	Competency may be assessed through: 5.1 Direct observation with oral questioning 5.2. Portfolio 5.3 Interview
6. Context of Assessment	6.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

UNIT OF COMPETENCY: TRIM AND PRUNE LANDSCAPE PLANTS

UNIT CODE : AGR611376

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to trim and prune landscape plant based on the purposes of such landscape maintenance activity.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Identify trimming and pruning requirements	1.1 Landscape plants and their parts that are in need of trimming and pruning are distinguished according to landscape maintenance standards (LMS) 1.2 Purpose and method of pruning are determined according to LMS 1.3 Utility services are located using site plans and in consultation with concerned persons or authority 1.4 Access to the site is determined in consultation with concerned persons or authority 1.5 Occupational Health and Safety (OHS) hazards are identified, risks assessed and reported to concerned persons or authority
2. Prepare for trimming and pruning operations	2.1 Tools, supplies and equipment are prepared in accordance with the work requirements 2.2 Pre-operational and safety checks are carried out on tools and equipment according to manufacturer's specifications and industry work practices 2.3 Prescribed safety and personal protective equipment (PPE) is selected, used and maintained
3. Perform trimming and pruning	3.1 Safety and warning devices are installed around the site during and between work periods 3.2 Landscape plants are trimmed and pruned in accordance with work program and LMS 3.3 Trimming and pruning of landscape plants are done using prescribed tools and equipment 3.4 Sterilizing agent/compound are applied on pruning wounds in accordance with LMS 3.4 Tasks are conducted using appropriate PPE
4. Perform post-trimming and pruning activities	4.1 Trimming and pruning wastes are collected and disposed from the site in accordance with environmental standards and LMS 4.2 Recommended manual handling techniques are used when lifting or moving heavy loads 4.3 Tools and equipment are cleaned, maintained and stored according to LMS 4.4 Maintenance of clean and safe area is undertaken throughout and on completion of work 4.5 Work outputs are recorded or reported to concerned persons or authority according to industry practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Landscape plants	1.1 Shrubs and hedges 1.2 Vines 1.3 Palms 1.4 Bamboos 1.5 Trees
2. Purpose	May include: 2.1 Create and maintain form and shape of landscape plant 2.2 Promote health 2.3 Direct or control growth 2.4 Encourage flowering and fruiting 2.5 Remove/minimize risk/hazard
3. Utility services	3.5 Aboveground utilities 3.1.1 Electrical and communication lines 3.1.2 Cable/TV lines 3.6 Underground utilities 3.2.1 Irrigation and domestic water distribution lines 3.2.2 Electrical and communication lines 3.2.3 Cable/TV lines 3.2.4 Drainages and sewerages
4. Concerned persons or authority	4.1 Supervisor 4.2 Property management officer 4.3 Home owner 4.4 Inspector
5. Hazards	May include but are not limited to: 5.1 Disturbance or interruption of services 5.2 Solar radiation 5.3 Pollutants (e.g. gaseous, suspended particulate matters) 5.4 Noise 5.5 Manual handling of moving powered equipment or parts, sharp tools and materials 5.6 Uneven landforms/surfaces 5.7 Flying and falling objects
6. Risks	May include but are not limited to: 6.1 Risk to co-workers, equipment, other people and animals external to the workplace (e.g. members of the public, stray pets and wildlife) 6.2 Risk to natural environment

VARIABLE	RANGE
7. Tools, supplies and equipment	May include but are not limited to: 7.1 Hedge trimmers (HT): Power and manual 7.2 Shears: Pruning, loping 7.3 Saws: Pruning saws, chain saws, bow saws 7.4 Pole/Tree pruner 7.5 Telescopic shaft/high branch pruning chain saws 7.6 Ladder/adjustable ladder 7.7 Basket type boom/cherry picker 7.8 Sterilizing agent/pruning compound
8. Safety and PPE	8.1 Early warning devices 8.2 Overall 8.3 Gloves 8.4 Goggles 8.5 Ear muff/plugs 8.6 Gas mask 8.7 Safety belt/harness 8.8 Climbing ropes/gadgets 8.9 Hard hat 8.10 Shoes/safety shoes 8.11 Reflectorized vest (depends on location of work)
9. Early warning devices	May include but are not limited to: 9.1 Traffic cones 9.2 Warning tapes 9.3 Warning signage
10. Sterilizing agent/compound	10.1 Coal tar 10.2 Bituminous pruning compound 10.3 Latex Paint with fungicide 10.4 Fungicide
11. Trimming and pruning wastes	11.1 Tops or shoots 11.2 Branches 11.3 Twigs 11.4 Leaves 11.5 Flowers and fruits
12. Maintenance of clean and safe area	Tasks may include: 12.1 Keeping public access paths and roads clear of debris, waste, tools and equipment 12.2 Disabling tools and equipment after use 12.3 Using signage and barriers where necessary 12.4 Removing debris and waste from the work area

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Identified trimming and pruning requirements 1.2 Prepared supplies, materials, tools, equipment and PPE 1.3 Trimmed and pruned landscape plants 1.4 Applied sterilizing agent/compound 1.5 Performed post-trimming and pruning operations 1.6 Observed OHS practices
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 Types of landscape plants, their characteristics and growth habit 2.2 Techniques, principles and procedures of trimming and pruning applicable to plant types and plant factors, environmental and cultural considerations and objectives of the tasks 2.3 Effects of trimming and pruning operations on plant growth and development 2.4 Functions and uses of tools and equipment 2.5 Hygiene practices and plant health principles relevant to trimming and pruning 2.6 Hazards/risks and responsibilities associated with working in a publicly accessible situation 2.7 Values: <ul style="list-style-type: none"> 2.7.1 Diligence 2.7.2 Time consciousness 2.7.3 Cost consciousness 2.7.4 Hygiene consciousness 2.7.5 Persistence 2.7.6 Systematic and organized
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Using of appropriate tools and equipment and prescribed safety/protective devices 3.2 Understanding work procedures 3.3 Participating in teams and contributing to team objectives 3.4 Communication skills in receiving instructions and rendering even simple oral and written reports 3.5 Maintaining tools and equipment 3.6 Minimizing environmental disturbances
<p>4. Resource Implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Landscape plants and/or landscaped area 4.2 Tools, equipment and supplies relevant to the activity 4.3 Protective/safety gadgets
<p>5. Method of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 5.1 Direct Observation with Oral Questioning 5.2 Interview 5.3 Portfolio
<p>6. Context of Assessment</p>	<p>6.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.</p>

UNIT OF COMPETENCY: PERFORM WEEDING AND CULTIVATION

UNIT CODE : AGR611377

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to conduct weeding operations and soil cultivation activities. This is purposely to minimize competition and to improve soil aeration and water absorption/retention, respectively for better growth and development of the landscape plants.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Determine requirements for weeding and cultivation activity	1.1 Weed species and “ volunteer ” plants (“invaders”) that are out-of-place and considered undesirable in the landscape are identified based on specific landscape maintenance guidelines or as per instructions. 1.2 Landscape areas needing weeding and cultivation are identified based on instructions or in accordance with LMS
2. Prepare for weeding and cultivation operation	2.1 List of weeds and “volunteer plants” and the map of specific landscape areas are prepared and secured 2.2 Method and purpose of weeding are determined based on the type of weed species and out-of-place “volunteer” species 2.3 Tools, supplies and equipment needed are made ready and available for use according to the types of weeds and “volunteer” species that needs removal 2.4 Appropriate safety protective devices are prepared for use
3. Conduct weeding and removal of “volunteer” species	3.1 Weeds and out-of-place “volunteer” plant species in the landscape are removed and disposed in accordance with landscape maintenance standard or as per instructions. 3.2 Weeds and out-of-place “volunteer” plant species are removed using prescribed tools and equipment 3.3 Tasks are done using appropriate safety/protective devices
4. Determine compacted soil	4.1 Compacted soil or soil that is having problem with aeration, water infiltration and conditions for root development is determined as per established practice 4.2 Effects of compacted soil on root development and anchorage are recognized 4.3 Method and purpose of soil cultivation are determined based on the conditions of the soil

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
5. Cultivate compacted soil	5.1 Compacted soil is cultivated simultaneous with weeding operations in accordance with landscape maintenance standards or as per instructions 5.2 Soil cultivation is done using appropriate tools and equipment 5.3 Task is performed using prescribed safety/protective devices
6. Perform post- weeding and soil cultivation activities	6.1 Tools and equipment are cleaned, maintained and stored as per instruction of in accordance with LMS 6.2 <i>Maintenance of clean and safe area</i> is undertaken throughout and on completion of work 6.3 Work outputs are recorded or reported to concerned persons or authority according to industry practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Weed species and volunteer plants (invaders)	1.1 Weeds 1.1.1 Grass 1.1.2 Sedges 1.1.3 Shrubs 1.1.4 Vines 1.2 Out-of-place “volunteer” plant species are those that grow naturally in the site and are competing with desirable plants, making the site ugly and/or are eye-sore in the landscape. Volunteer species can be landscape plants but is not included in the landscape design
2. Landscape areas	May include but are not limited to: 2.1 Lawn 2.2 Flower beds 2.3 Hedges and shrubs landscape area 2.4. Tree lawn or tree planting verges
3. Methods of weed control	3.1 Manual weeding 3.2 Mechanical weeding 3.3 Chemical weeding
4. Purpose of weeding	4.1 Release the desirable landscape plants from competition of weeds and out-of-place “volunteer” species 4.2 Improve the health conditions of the landscape plants 4.3 Lessen susceptibility of the landscape plants from pest and disease attack
5. Methods of soil cultivation	5.1 Manual 5.2 Mechanical
6. Purpose of soil cultivation	6.1 Improve soil structure, porosity, aeration and water infiltration 6.2 Improve conditions for root system development and root anchorage 6.3 Improve water and nutrient absorption 6.4 Enhance soil macro and micro-organisms activity
7. Supplies, tools and equipment for weeding operations	7.1 Small bolo “dulos” 7.2 Scythe (“Karit”) 7.3 Small round/flat bar 7.4 Spade 7.5 Trowel 7.6 Chemicals (Types: Selective herbicide; Wide spectrum)

VARIABLE	RANGE
8. Tools and equipment for soil cultivator	8.1 Small bolo (“dulos”) 8.2 Small round/flat bar 8.3 Spade 8.4 Soil cultivating machine
9. Protective/safety devices used in weeding and cultivation	9.1 Goggles 9.2 Overalls, gloves 9.3 Reflectorized vest (depends on location of work)
10. Maintenance of clean and safe area	Tasks may include: 10.1 Keeping public access paths and roads clear of debris, waste, tools and equipment 10.2 Disabling tools and equipment after use 10.3 Using signage and barriers where necessary 10.4 Removing debris and waste from the work area

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Determined requirements for weeding and cultivation activity 1.2 Prepared for weeding and cultivation operation 1.3 Conducted weeding and removal of “volunteer” plant species 1.4 Determined compacted soil 1.5 Cultivated compacted soil 1.6 Conducted post weeding and soil cultivation operations 1.7 Used/operated tools and equipment properly 1.8 Used prescribed protective/safety gadgets
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 Recognition of the effects of weeds and undesirable “volunteer” species (invaders) on landscape plants 2.2 Knowledge in distinguishing weeds and undesirable “volunteer” species 2.3 Use of weed control and soil cultivation method 2.4. Functions, uses and maintenance of tools and equipment 2.5 Values: <ul style="list-style-type: none"> 2.5.1 Diligence 2.5.2 Time consciousness 2.5.3 Cost consciousness 2.5.4 Hygiene consciousness 2.5.5 Persistence 2.5.6 Systematic and organized
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Use of appropriate tools and equipment and prescribed protective/safety devices in weeding and soil cultivation 3.2 Communication skills in receiving instructions and rendering even verbal reports about the completed task
<p>4. Resource Implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Landscape area 4.2 Necessary tools and equipment 4.3 Relevant supplies and materials
<p>5. Method of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 5.1 Direct Observation with Oral Questioning 5.2 Interview 5.3 Portfolio
<p>6. Context of Assessment</p>	<ul style="list-style-type: none"> 6.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

UNIT OF COMPETENCY: APPLY FERTILIZER (NUTRITION)

UNIT CODE : AGR611378

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to recognize types of fertilizers and apply the right amount of such fertilizers at the right time to landscape plants.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Identify fertilizer application requirements	1.1 Soil and plant samples (leaves) are collected for analysis in accordance with standard operating procedures (SOPs) 1.2 Landscape plants in need of nutrition are identified based on the results of soil and plant analyses
2. Prepare for fertilizer application activity	2.1 Different types of fertilizers are selected based on nutritional guidelines and standards 2.2 Method of fertilizer application are determined according to LMS 2.3 Fertilizer application tools and equipment are selected and prepared according to application method selected 2.4 Soil and plants are prepared for application of fertilizer in accordance with the instructions or available standards 2.5 Prescribed safety and personal protective equipment (PPE) is selected.
3. Perform fertilizer application activities	3.1 Frequency and dosage of fertilizer application is determined based on landscape plant requirements or nutritional guidelines/standards 3.2 Fertilizer is applied in accordance with recommended application method 3.3 Fertilizer is applied in accordance with to OHS requirements and Fertilizer and Pesticide Authority (FPA) guidelines 3.4 Task is performed using the prescribed tools and equipment and appropriate protective/safety devices
4. Perform post-fertilizer application activities	4.1 Tools and equipment are cleaned, maintained and stored according to LMS 4.2 Maintenance of clean and safe area is undertaken throughout and on completion of work 4.3 Work outputs are recorded or reported to concerned persons or authority according to industry practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Soil sample	1.1 Depth of soil sampling applicable to landscape plant 1.2 Amount of soil sample 1.3 Method soil analysis 1.3.1 soil test kit 1.3.2 soil analysis laboratory
2. Landscape plants	2.1 Shrubs and hedges 2.2 Vines 2.3 Palms 2.4 Bamboos 2.5 Trees
3. Results of soil and plant analyses	3.1 Soils 3.1.1 Slightly, moderately to highly acidic 3.1.2 Slightly, moderately to highly saline/alkaline 3.1.3 Adequate, medium, low OM 3.1.4 Adequate, medium, low N or P or K 3.2 Plants 3.2.1 Visual symptoms: Chlorotic, etc 3.2.2 Tissue analysis: Deficient, moderately deficient, highly deficient in N, P or K
4. Types of fertilizers	Types of fertilizers vary. These may include the following 4.1 Organic: 4.1.1 Compost, humus, vermi-compost and some commercially-brands 4.1.2 Bio-fertilizers: Bio-N, Bio-tab, Mycovam, Mycogroe, Rhizo-N, etc... 4.2 Inorganic 4.2.1 Easily dissolved fertilizer: Ammonium sulfate, Ammonium phosphate, Ammonium, Sulfate, Phosphate, Potassium, Urea, Complete 4.2.2 Slow-release fertilizers: Multi-cote, Osmocote, Nutricote, Fertifile, etc. 4.2.3 Liquid fertilizer
5. Methods of application	5.1 Liquid Fertilizer 5.1.1 Foliar spraying 5.1.2 Soil drenching 5.1.3 Fertigation (incorporated in irrigation water) 5.1.4 Root feeding 5.1.5 Trunk injection 5.2 Powder/granules 5.2.1 Top dressing or broadcasting 5.2.2 Drilling

VARIABLE	RANGE
6. Protective/safety devices	6.1 Overalls 6.2 Rubberized gloves 6.3 Goggles 6.4 Reflectorized vest (depends on location of work) 6.5 Hard hat 6.6 Field shoes
7. Maintenance of clean and safe area	Tasks may include: 7.1 Keeping public access paths and roads clear of debris, waste, tools and equipment 7.2 Disabling tools and equipment after use 7.3 Using signage and barriers where necessary 7.4 Removing debris and waste from the work area

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Identified fertilizer application requirements 1.2 Prepared for fertilizer application activity 1.3 Performed fertilizer application activities 1.4 Performed post fertilizer application activities
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 Types of landscape plants, their characteristics and growth habit 2.2 Procedures and techniques in diagnosis/recognition of nutrient deficiency 2.3 Types, characteristics and methods of application of fertilizers 2.4 Frequency and dosage of fertilizers 2.5 Effects of fertilizer on plant growth and development 2.6 Functions, uses and maintenance of tools and equipment including relevant supplies and materials for the job 2.7 Hygiene practices and plant health principles relevant to fertilizer application activity 2.8 Values: <ul style="list-style-type: none"> 2.8.1 Diligence 2.8.2 Time consciousness 2.8.3 Cost consciousness 2.8.4 Hygiene consciousness 2.8.5 Persistence 2.8.6 Systematic and organized
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Using of appropriate tools and equipment and prescribed protective/safety devices in the application of fertilizers 3.2 Understanding work procedures 3.3 Participating in teams and contributing to team objectives 3.4 Communication skills in receiving instructions and in rendering simple written and even oral reports
<p>4. Resource Implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Fertilizers materials including other relevant supplies 4.2 Tools and equipment 4.3 Landscape area/landscape plants
<p>5. Method of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 5.1 Direct Observation with Oral Questioning 5.2 Interview 5.3 Portfolio
<p>6. Context of Assessment</p>	<p>6.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.</p>

UNIT OF COMPETENCY: WATER PLANTS

UNIT CODE : AGR611379

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to maintain the health and vigor of the landscape plants through proper watering/irrigation.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Determine requirements of watering/irrigating landscape plants	1.1 Importance of water to growth and development of landscape plants and the effects of water stress (less or excess water) to plants are recognized as per established practice 1.2 Landscape plants suffering from less or excessive watering are determined using some visually observable plant and soil conditions and/or guidelines
2. Prepare for watering/irrigation activity	2.1 Amount and frequency of watering/irrigation of plants are determined in accordance with LMS or as per instructions 2.2 Tools, supplies and equipment needed are prepared based on the method of watering and/or irrigation to be used 2.3 Prescribed protective/safety devices are made ready and available for use
3. Conduct watering/irrigation of plant	3.1 Watering or irrigating of plants is done in accordance with the basic principles or standard practice or as per instructions 3.2 Watering/irrigation is performed using the irrigation tools and equipment appropriate to the methods selected 3.3 Task is performed using the prescribed protective/safety gadgets
4. Perform post-watering/irrigation activities	4.1 Tools and equipment are cleaned, maintained and stored as per instruction of in accordance with LMS 4.2 Maintenance of clean and safe area is undertaken throughout and upon completion of work 4.3 Work outputs are recorded or reported to concerned persons or authority according to industry practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Importance of water to plants	Roles of water includes but not limited to the following: 1.1 Maintains of vital physiological processes in plants 1.2 Primary raw material for photosynthesis or food manufacture 1.3 Maintains of turgidity of the cells 1.4 Helps in the translocation of nutrients, food and other assimilates 1.5 Maintains the health conditions of the plant
2. Plant conditions	Visually observable conditions of plants suffering from water stress 2.1 Wilting and die back 2.2 Change in color and appearance of the leaves 2.3 Premature falling of leaves/defoliation
3. Soil conditions	Visually observable conditions of soil suffering from water stress 3.1 When dry 3.1.1 Too dusty 3.1.2 Cracks on soil 3.2 When waterlogged or over-watered 3.2.1 Too wet 3.2.2 Muddy
4. Amount and frequency of watering	Determining when and how much to irrigate may include: 4.1 Observation of the conditions of the plant 4.2 Observation of the conditions of the soil 4.3 Use of moisture meter
5. Methods of watering/irrigation	The methods of watering depends on the kind of landscape plants/landscape areas and available facilities: 5.1 Overhead irrigation: overhead sprinkler, pop-up etc. 5.2 Drip irrigation 5.3 Furrow irrigation 5.4 Basin irrigation
6. Tools and equipment	Depending on the method, the following may be needed: 6.1 Water hose with and without sprinklers 6.2 Water truck 6.3 Irrigation system installed 6.4 Plumbing tools

VARIABLE	RANGE
7. Protective/safety devices	7.1 Overalls 7.2 Gloves 7.3 Hat/hard hat 7.4 Rain boots 7.5 Reflectorized vest (depends on the location of work)
8. Maintenance of clean and safe area	Tasks may include: 8.1 Keeping public access paths and roads clear of debris, waste, tools and equipment 8.2 Disabling tools and equipment after use 8.3 Using signage and barriers where necessary 8.4 Removing debris and waste from the work area

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Determined requirements of watering/irrigating plants 1.2 Recognized importance of water to plants and the consequent effects of less or over-watering 1.3 Distinguished plants needing watering and plants in excess of watering or suffering from waterlogged conditions 1.4 Prepared for watering/irrigation activity as per instructions 1.5 Conducted watering/irrigation using the prescribed tools, supplies and equipment and in accordance with standard practice 1.6 Performed post-watering/irrigation activity
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 Procedures and techniques in watering/irrigation 2.2 Functions, uses and maintenance of tools and equipment for efficient watering/irrigation 2.3 Values: <ul style="list-style-type: none"> 2.3.1 Diligence 2.3.2 Time consciousness 2.3.3 Cost consciousness 2.3.4 Hygiene consciousness 2.3.5 Persistence 2.3.6 Systematic and organized
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Use of appropriate tools and equipment and prescribed protective/safety devices in watering/irrigation 3.2 Communication skills in receiving instructions and rendering even verbal reports about the completed task
<p>4. Resource Implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Landscape area/landscape plants 4.2 Tools and equipment 4.3 Protective/safety gadgets
<p>5. Method of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 5.1 Direct Observation with Oral Questioning 5.2 Interview 5.3 Portfolio
<p>6. Context of Assessment</p>	<p>6.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.</p>

UNIT OF COMPETENCY: CONTROL AND PREVENT PLANT PEST AND DISEASES

UNIT CODE : AGR611380

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to determine types of pests and diseases and their prevention and control measures

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Determine requirements of preventing and controlling plant pests and diseases	1.1 Infested and diseased landscape plants are determined based on plant conditions, symptoms and signs and other manifestation of infestation and infection 1.2 Pests and diseases are identified and classified using general classification guidelines 1.3 Life cycle or various life stages of pests from eggs, larvae, pupa and adult and their mode of attack or infestation are known 1.4 Life cycle or various life stages and signs and symptoms of plant diseases and their mode of attack are known 1.5 Access to the site is determined in consultation with concerned persons or authority 1.6 Occupational Health and Safety (OHS) hazards are identified, risks assessed and reported to concerned persons or authority
2. Prepare for application of pests and disease prevention and control measures	2.1 Method of prevention and control is determined based on types of pests and diseases, their mode of attack and extent of infestation and infection 2.2 Tools, equipment, supplies and materials relevant to the method of prevention and control are prepared 2.3 Prescribed safety and personal protective equipment (PPE) is selected in accordance with work requirements
3. Apply pest and disease prevention and control measures	3.1 Manual and biological method of prevention and control of pest and disease are applied whenever applicable 3.2 In case of using chemical and bio-pesticides, the frequency and dosage of application is determined based on types of pests and diseases and extent of attack and in accordance with LMS or manufacturer's recommendation 3.3 Pest and disease prevention and control measures are applied in accordance with OHS requirements and Fertilizer and Pesticide Authority (FPA) guidelines 3.4 Task is performed using prescribed tools, supplies and appropriate protective/safety devices
4. Perform post-prevention and control measures	4.1 Tools and equipment are cleaned, maintained and stored according to LMS 4.2 Maintenance of clean and safe area is undertaken throughout and on completion of work 4.3 Work outputs are recorded and reported to concerned persons or authority according to industry practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Landscape plants	1.1 Shrubs and hedges 1.2 Vines 1.3 Palms 1.4 Bamboos 1.5 Trees
2. Plant conditions	2.1 Age/Stage of growth 2.2 Healthy and vigorous 2.3 Diseased/infected: 2.4 Infested
3. Symptoms, signs and other manifestations diseases	May include but are not limited to: 3.1 Diseases 3.1 Leaf spots 3.2 Anthracnose 3.3 Fruiting bodies 3.4 Presence of hyphae 3.5 Pests 3.5.1 Gall on leaves, stems, branches 3.5.2 Skeletonized, browsed/chewed leaves 3.5.3 Withering, die back etc
4. Pests and diseases	4.1 Pests 4.1.1 Insect pests: Chewing, Sucking, Girdling/ Boring, etc. 4.1.2 Termites 4.1.3 Nematodes 4.2 Diseases 4.2.1 Parasitic fungus 4.2.2 Bacteria 4.2.3 Viruses
5. Methods of prevention and control	5.1 Prevention 5.1.1 Species/individual (genetically superior) selection 5.1.2 Pest and disease free 5.1.3 Cultural management 5.1.4 Sanitation 5.2 Control 5.3 Manual/mechanical 5.4 Chemical (systemic, broad spectrum, contact) 5.5 Biological- (insects, microorganisms) 5.6 Bio-pesticides

VARIABLE	RANGE
6. Tools, supplies and equipment	6.1 Backpack sprayer 6.2 Boom sprayer 6.3 Soil drencher 6.4 Pruning shears, 6.5 Pruning saws
7. Protective/safety gadgets	7.1 Overalls, gloves 7.2 Gas mask 7.3 Goggles 7.4 Reflectorized vest (depends on location of work)
8. Maintenance of clean and safe area	Tasks may include: 8.1 Keeping public access paths and roads clear of debris, waste, tools and equipment 8.2 Disabling tools and equipment after use 8.3 Using signage and barriers where necessary 8.4 Removing debris and waste from the work area

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Determined requirements for the prevention and control of pests and diseases 1.2 Prepared for the application of pest and disease prevention and control 1.3 Applied pest and disease prevention and control measures 1.4 Conducted post-pest and disease prevention and control operations 1.5 Performed tasks using appropriate tools, equipment and safety/protective devices
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 Types of landscape plants, their conditions and stage of growth 2.2 General classification of pests and diseases, life cycle and mode of attack 2.3 Procedures and techniques in prevention and control of pests and diseases 2.4 Functions, uses and maintenance of tools and equipment 2.5 Values: <ul style="list-style-type: none"> 2.5.1 Diligence 2.5.2 Time consciousness 2.5.3 Cost consciousness 2.5.4 Hygiene consciousness 2.5.5 Persistence 2.5.6 Systematic and organized
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Use of appropriate tools and equipment and prescribed protective/safety devices in the prevention and control of pests and diseases 3.2 Communication skills in receiving instructions and in rendering simple written and even oral reports
<p>4. Resource Implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Landscape area/landscape plants 4.2 Tools, equipment, supplies and materials and protective/safety devices 4.3 Instructions or guidelines
<p>5. Method of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 5.1 Direct Observation with Oral Questioning 5.2 Interview 5.3 Portfolio
<p>6. Context of Assessment</p>	<ul style="list-style-type: none"> 6.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

UNIT OF COMPETENCY: PROVIDE PLANT SUPPORT**UNIT CODE : AGR611381****UNIT DESCRIPTOR :** This unit covers the knowledge, skills and attitudes required to provide support to plants including the selection, preparation (including preservation treatments), installation and maintenance of support materials.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Identify requirements for installing plant support	1.1 Landscape plants in need of plant support are marked and counted as per instructions or in accordance with LMS 1.2 Purpose and method of providing plant support are determined in accordance with LMS or as per instruction
2. Prepare for installation of plant support	2.1 Support materials are selected and prepared relevant to the purpose and method of providing plant support or in accordance with LMS or as per instructions. 2.2 Plant support materials are applied with preservatives at desired dosage and length of treatment to prolong serviceability as per instructions 2.3 Tools, supplies and equipment needed are prepared according to the purpose and method of providing plant support 2.4 Appropriate safety protective devices needed to carry out the task are also made ready and available for use
3. Install plant support	3.1 Support materials are installed in accordance with purpose and method of providing plant support or in accordance with LMS or as per instructions. 3.2 Plant support installation is undertaken using prescribed tools and equipment
4. Maintain plant support	4.1 Plant support is inspected and maintained for a period depending on the conditions of the plant or in accordance with LMS or as per instruction 4.2 Unserviceable plant support is replaced if necessary or as instructed 4.3 Plant support is removed/dismantled once it is no longer needed or has served its intended purpose or as instructed 4.4 Tasks are performed using prescribed tools and equipment and appropriate safety protective devices
5. Perform post-plant support activities	5.1 Plant support materials that dismantled and can still be re-used are kept in proper storage as per instruction 5.2 Tools and equipment are cleaned, maintained and stored as per instruction of in accordance with LMS 5.3 Maintenance of clean and safe area is undertaken throughout and on completion of work 5.4 Work outputs are recorded or reported to concerned persons or authority according to industry practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Landscape plants	1.1 Shrubs and hedges 1.2 Vines 1.3 Palms 1.4 Bamboos 1.5 Trees
2. Purpose and methods of plant support	Depending on types, sizes and conditions of plants, the following methods of providing plant support may be adopted: 2.1 Support staking: single, double, triple staking 2.2 Propping 2.3 Protective staking or tree guard 2.4 Guying
3. Plant support materials	Available plant support materials and accessories as specified: 3.1 Wooden (lumber) stakes 3.2 Round wood stakes 3.3 Bamboo poles 3.4 Steel 3.5 Plastic 3.6 Guy materials (GI wire, GI stranded wire, used garden hose, cloth, piece of old inner tube) 3.7 Pegs (wooden, steel, plastic) 3.8 Tree ties (rubber pad, belt made of Hessian band, thick cloth, used rubber interior tire, staple wire) 3.9 Nails
4. Protective safety devices	4.1 Hat/Hard hat 4.2 Early warning device 4.3 Goggles 4.4 Overalls 4.5 Gloves 4.6 Safety shoes 4.7 Reflectorized vest
5. Maintenance of clean and safe area	Tasks may include: 5.1 Keeping public access paths and roads clear of debris, waste, tools and equipment 5.2 Disabling tools and equipment after use 5.3 Using signage and barriers where necessary 5.4 Removing debris and waste from the work area

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Identified requirements for installation of plant support 1.2 Prepared for installation of plant support 1.3 Installed plant support 1.4 Inspected, maintained, replaced and removed/dismantled plant support 1.5 Conducted post operation activities 1.6 Performed tasks using appropriate tools, equipment and protective devices
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 Selection and preparation of appropriate plant support 2.1 Procedures and techniques in providing plant support 2.2 Functions, uses and maintenance of tools and equipment 2.3 Values: <ul style="list-style-type: none"> 2.3.1 Diligence 2.3.2 Time consciousness 2.3.3 Cost consciousness 2.3.4 Hygiene consciousness 2.3.5 Persistence 2.3.6 Systematic and organized
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Use of appropriate plant support materials, tools and equipment 3.2 Communication skills in receiving instructions and in rendering simple written and even oral reports
<p>4. Resource Implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Plant support materials 4.2 Plants (vines, shrubs, bamboos, palms, trees, bamboos) and /or landscaped area 4.3 Tools and equipment 4.4 Protective/safety gadgets
<p>5. Method of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 5.1 Direct Observation with Oral Questioning 5.2 Interview 5.3 Portfolio
<p>6. Context of Assessment</p>	<ul style="list-style-type: none"> 6.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

UNIT OF COMPETENCY: PERFORM LAWN GRASS MAINTENANCE

UNIT CODE : AGR611382

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to maintain lawn grasses in residential and institutional landscape areas.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Mow lawn grass	1.1. Supplies, Materials, Tools and equipment are prepared for use in mowing lawn grass 1.2. Lawn grass is mowed in accordance with specifications or instructions 1.3. Tasks are performed using the prescribed tools and equipment and or based on established practice 1.4. Personal Protective Equipment and Safety procedures are observed during mowing of lawn grass
2. Irrigate lawn	2.1. Supplies, Tools and equipment are prepared for use in irrigating lawn 2.2. Personal Protective Equipment and Safety procedures are observed in irrigating lawn 2.3. Lawn is irrigated based on established procedures 2.4. Modifications on established procedures are carried on in the event of malfunctions, climatic changes and accidents
3. fertilize lawn	3.1. Supplies, Materials, Tools and equipment are prepared for use in fertilizing lawn 3.2. Personal Protective Equipment and Safety procedures are observed in fertilizing lawn 3.2. Fertilizers are applied based on manufacturer's instructions and established procedures
4. Control pests	4.1. Supplies, Materials, Tools and equipment are prepared for use in controlling pests 4.2. Personal Protective Equipment and Safety procedures are observed in controlling pests 4.3. Pests are controlled using appropriate materials and conditions
5. Control weeds	5.1. Supplies, Materials, Tools and equipment are prepared for use in controlling weeds 5.2. Personal Protective Equipment and Safety procedures are observed in controlling weeds 5.3. Weeds are controlled using appropriate materials and procedures

RANGE OF VARIABLES

VARIABLE	RANGE
1. Lawn grass	1.1. Paspalum conjugatum /Paspalum vaginatum (Carabao grass) 1.2. Cynodon dactylon/C. transvalensis (Bermuda grass) 1.3. Zoysia matrella (Manila grass) 1.4. Zoysia japonica (Blue grass)
2. Personal Protective Equipment	2.1. Rubber/ Leather Gloves 2.2. Goggle 2.3. Rubber/Safety boots 2.4. Safety Apron 2.5. Hard hat 2.6. Cover all 2.7. Ear plug/muffs 2.8. Chemical Mask
3. Established procedures in Irrigating lawn	3.1. Manual 3.2. Automated (Computer or Manual Operated)
4. Fertilizers	4.1. Granular 4.2. Liquid 4.3. Slow release (tablets or granules) 4.4. Organic
5. Pests	5.1. Insect pests 5.2. Pathogenic / fungal pests 5.3. Nematodes
6. Weed control procedures	6.1. Manual 6.2. Chemical

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1. Identified and used tools and equipment in maintaining lawn grass 1.2. Controlled pests, diseases and weeds through chemical use or manually 1.3. Performed irrigation and fertilization of lawn grass 1.4 Exhibited safety practices and procedures in mowing, irrigating lawn grass, applying fertilizers and controlling pests, diseases and weeds.
2. Underpinning Knowledge and Attitude	2.1. Functions, uses and basic maintenance of tools and equipment 2.2. Different types of pests, diseases and weeds 2.3. Types of Insecticides, Fungicides and Herbicides 2.4. Mixing appropriate amount of chemical-pesticides 2.5. Values (Diligence, Time and Cost-consciousness, Hygiene, Systematic and Organized)
3. Underpinning Skills	3.1. Applying prescribed amount of pesticides 3.2. Use of appropriate tools and equipment and PPE 3.3. Communication skills in receiving instruction and rendering simple oral reporting
4. Resource Implications	The following resources MUST be provided: 4.1. Lawn 4.2. PPE 4.3. Mowing, Irrigation tools and equipment 4.4. Pest / Weed Control (Supplies, Tools and Equipment)
5. Method of Assessment	Competency may be assessed through: 5.1 Direct observation with oral questioning 5.2. Portfolio 5.3 Interview
6. Context of Assessment	6.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

UNIT OF COMPETENCY: PERFORM RE-PLANTING ACTIVITIES**UNIT CODE : AGR611383****UNIT DESCRIPTOR :** This unit covers the knowledge, skills and attitudes required to remove landscape plants that are dying, dead, diseased, unsightly and to replace them with new ones either same or new species.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Determine requirements for removal and re-planting of landscape plants	1.1 Landscape plants that need to be removed/replaced are recognized in accordance with the instructions or with LMS 1.2 Landscape plants needing removal and replacement are marked and counted based on the size, plant conditions and purpose are done using appropriate measuring tools and equipment
2. Prepare for removal and replacement of landscape plants	2.1 List of landscape plants needing removal and replacement is secured and made ready for the job 2.2 Tools, supplies and equipment needed are made ready and available for use according to the types and sizes of landscape plants 2.3 Appropriate safety protective devices are made ready and available for use
3. Conduct removal and disposal of landscape plants	3.1 Subject landscape plants are removed and disposed from site in accordance with LMS or based on instructions 3.2 Removal and disposal are done using appropriate tools and equipment. 3.3 Tasks are performed using prescribed protective/safety devices
4. Prepare land/soil for re-planting	4.1 Land/soil is prepared for replanting following the landscape installation/maintenance standard or based on instructions 4.2 Preparation of land/soil is done using appropriate tools and equipment. 4.3 Task is performed using prescribed protective/safety devices
5. Select right species and size of landscape plants for replacement	5.1 Right species, size and quality of landscape plants to be used for re-planting are selected based on instructions or in accordance with LMS 5.2 Species and size of the landscape plants removed from site are considered but other species and sizes are given equal consideration depending on the purpose of re-planting or as per instructions

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
6. Conduct re-planting activity	6.1 <i>Re-planting activity</i> is done in accordance with LMS or as per instructions 6.2 Appropriate tools, supplies and equipment and prescribed protective/safety devices are used in the conduct of the activity
7. Perform post-removal and re-planting activities	7.1 Tools and equipment are cleaned, maintained and stored as per instruction of in accordance with LMS 7.2 <i>Maintenance of clean and safe area</i> is undertaken throughout and on completion of work 7.3 Work outputs are recorded and reported to concerned persons or authority according to industry practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Landscape plants	May include but are not limited to: 1.1 Hedges 1.2 Shrubs 1.3 Vines 1.4 Trees 1.5 Palms 1.6 Bamboos
2. Landscape plant conditions needing removal and replacement	Plant conditions may be manifested as: 2.1 Unhealthy 2.2 Dying 2.3 Diseased 2.4 Dead 2.5 Overgrown 2.6 Aesthetically ugly/eyesore 2.7 Misplaced 2.8 Structurally un-sound
3. Size of landscape plants	Size of landscape plants to be removed and to be used for replacement may be expressed in terms of but are not limited to: 3.1 Height 3.2 Diameter 3.3 Root ball
4. Quality of the landscape plants	Aside from size, quality of landscape plants to be used for re-planting may include but are not limited to: 4.1 Healthy and vigorous i.e. free from pests and diseases 4.2 Balanced root/shoot ratio 4.3 Absence of forking branches in the case of trees 4.4 Absence of wounds on the branches and stems
5. Purpose of removal and replacement	Purpose of removal and replacement may include but not limited to: 5.1 Aesthetic considerations 5.2 Safety and responsibility concerns 5.3 Environmental and cultural considerations 5.4 Economic (maintenance, removal and replacement costs)

VARIABLE	RANGE
6. Tools and equipment including supplies	6.1 Measurement instruments like diameter tape and meter tape 6.2 Spade 6.3 Shovel 6.4 Flat bar 6.5 Mallet 6.6 Hammer 6.7 Supplies: Soil mix, fertilizer, stakes, tree ties, nails
7. Protective/safety devices	7.1 Hat/hard hat 7.2 Overalls 7.3 Goggles 7.4 Safety shoes 7.5 Safety belt/Harness 7.6 Reflectorized vest (depends on location of work)
8. Re-planting activity	8.1 Basal fertilizer application, 8.2 Support and/or protective staking 8.3 Mulching
9. Maintenance of clean and safe area	Tasks may include: 9.1 Keeping public access paths and roads clear of debris, waste, tools and equipment 9.2 Disabling tools and equipment after use 9.3 Using signage and barriers where necessary 9.4 Removing debris and waste from the work area

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Determined requirements for the removal and replacement of landscape plants 1.2 Prepared for removal and replacement of landscape plants of plants 1.3 Performed removal and disposal of the subject landscape plants 1.4 Prepared land/soil of the spot for replanting 1.5 Selected right species and size of the landscape plant for replanting 1.6 Completed re-planting operations which includes basal fertilizer application, support staking, mulching and watering (if necessary) 1.7 Performed post removal and re-planting activity 1.8 Tasks are done using appropriate tools, equipment and protective/safety devices
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 Procedures and techniques in the: <ul style="list-style-type: none"> 2.1.1 identification of landscape plants to be removed 2.1.2 removal and disposal of subject landscape plants 2.1.3 preparation of land/soil 2.1.4 selection and use of the right species, size and quality of the landscape plant 2.1.5 replanting including other activities related to plant installation in the landscape 2.1.6. plant propagation 2.2 Functions and uses of tools and equipment 2.3 Values: <ul style="list-style-type: none"> 2.3.1 Diligence 2.3.2 Time consciousness 2.3.3 Cost consciousness 2.3.4 Hygiene consciousness 2.3.5 Persistence 2.3.6. Systematic and organized
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Use of appropriate tools and equipment and prescribed protective/safety devices in the removal and replacement of landscape plant. 3.2 Communication skills in receiving instructions and rendering even verbal reports about the completed task
<p>4. Resource Implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Landscape plants and landscaped areas 4.2 Supplies and materials needed for replanting like soil mixture, fertilizer, support materials, mulches, etc 4.3 Tools and equipment essential in removal and replacement of landscape plant 4.4 Protective/safety devices

5. Method of Assessment	Competency may be assessed through: 5.1 Direct Observation with Oral Questioning 5.2 Interview 5.3 Portfolio
6. Context of Assessment	6.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

UNIT OF COMPETENCY: COLLECT, DISPOSE AND UTILIZE ORGANIC WASTE

UNIT CODE : AGR611384

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to collect, dispose and utilize organic wastes such as grass clippings, leaf litter, weeded undesirable plants, trimming and pruning debris and other plant-derived organic wastes.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Determine the requirements for collection, disposal and utilization of organic waste	1.1 Types of plant-derived organic wastes are determined in accordance with the trimming and pruning program 1.2 Locations where the collected organic wastes will be disposed and/or will be segregated and processed for future utilization are identified in accordance with the trimming and pruning program
2. Prepare for collection, segregation, disposal and utilization of organic wastes	2.1 Tools, supplies and equipment needed are made ready and available for use according to the types of the organic wastes and whether these wastes are to be disposed as they are or to be processed and utilized 2.2 Appropriate safety protective devices are made ready and available for use
3. Gather and dispose organic wastes	3.1 Plant derived organic wastes are collected and disposed in accordance with instructions and/or with LMS 3.2 Collection and disposal are done using prescribed tools and equipment 3.3. Task is conducted using appropriate safety protective gadgets
4. Segregate and process collected organic wastes	4.1 Organic wastes that are to be utilized for specific purposes are collected, segregated and processed, if necessary in designated area as per instructions or in accordance with LMS 4.2 Collection, segregation and processing (e.g., conversion of woody organic wastes into chips) are done using prescribed tools, supplies and equipment 4.3 Task is performed using appropriate safety protective devices

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
5. Make use of organic wastes	5.1 Organic wastes (like palm leaves, twigs and branches of shrubs and trees) that are chipped into small materials are either mixed with grass clippings or other small organic wastes (leaf litter) for composting. Other wood chips are used as mulch. 5.2 Task is performed in accordance with environmental standards and using appropriate protective safety devices
6. Perform post – disposal and utilization of organic waste	6.1 Tools and equipment are cleaned, maintained and stored as per instruction of in accordance with LMS 6.2 Maintenance of clean and safe area is undertaken throughout and on completion of work 6.3 Work outputs are recorded or reported to concerned persons or authority according to industry practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Types of plant-derived organic wastes	1.1 Grass clippings/mowed grass 1.2 Weeded-out plants 1.2 Hedge and shrub trimmings 1.3 Pruned palm fronds and leaf sheaths 1.4 Leaf litter 1.5 Pruned dying, dead, diseased/infested and live branches 1.6 Removed/cut dead plants
2. Locations	Specific sites in the following green spaces 2.1 Club house/ house premises 2.2 Street corridors 2.3 Gardens 2.4 Parks 2.5 Golf course area (Hole Number, Fairways) 2.6 Memorial parks
3. Tools and equipment	2.1 Leaf rake 2.2 Fork 2.3 Trash bags 2.4 Wheel barrow 2.5 Multi-cab or pick-up 2.6 Elf and/or mini-dump truck 2.6 Chipper 2.7 Shovel 2.8 Spade 2.9 Shieve
3. Protective/safety gadgets	3.1 Hat/hard hat 3.2 Overalls including gloves 3.3 Shoes/safety shoes 3.4 Goggles 3.5 Reflectorized vest (if in risky areas like street/road corridors)
4. Purpose of utilization	Use of processed organic wastes may include but not limited to: 4.1 Compost 4.2 Mulch materials
5. Organic wastes	May include but are not limited to: 5.1 Palm leaves 5.2 Twigs 5.3 Branches of shrubs and trees
6. Maintenance of clean and safe area	Tasks may include: 6.1 Keeping public access paths and roads clear of debris, waste, tools and equipment 6.2 Disabling tools and equipment after use 6.3 Using signage and barriers where necessary 6.4 Removing debris and waste from the work area

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Determined requirements for the collection, disposal, segregation, processing and utilization of plant-derived organic wastes 1.2 Prepared for collection, disposal, segregation, processing and utilization of plant-derived organic wastes 1.3 Gathered and disposed plant derived organic wastes that are not intended for processing and utilization 1.4 Converted large organic waste materials into chips 1.5 Chipped organic wastes are mixed with small-sized organic wastes materials and used them to produce compost 1.6 Conducted post operations activities
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 Procedures and techniques in collection and disposal, segregation, processing and utilization of organic wastes 2.2 Functions, uses and maintenance of tools and equipment 2.3 Values <ul style="list-style-type: none"> 2.3.1 Diligence 2.3.2 Time consciousness 2.3.3 Cost consciousness 2.3.4 Hygiene consciousness 2.3.5 Persistence 2.3.6 Systematic and organized
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Use of appropriate tools and equipment and prescribed protective/safety devices in the collection and disposal, segregation, processing and utilization of organic wastes 3.2 Communication skills in receiving instructions and in rendering simple written and even oral reports
<p>4. Resource Implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Plants and landscaped areas 4.2 Trimming, pruning and other relevant maintenance program 4.2 Tools and equipment 4.3 Protective Safety Gadgets
<p>5. Method of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 5.1 Direct Observation with Oral Questioning 5.2 Interview 5.3 Portfolio
<p>6. Context of Assessment</p>	<p>6.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.</p>

SECTION 3 TRAINING STANDARDS

These standards are set to provide technical and vocational education and training (TVET) providers with information and other important requirements to consider when designing training programs for **LANDSCAPE INSTALLATION AND MAINTENANCE (SOFTSCAPE) NCII**.

3.1 CURRICULUM DESIGN

Course Title: **LANDSCAPE INSTALLATION AND MAINTENANCE (SOFTSCAPE)**

NC Level **NC II**

Nominal Training Duration: **212 Hours**

Course Description:

This course is designed to enhance the knowledge, skills and attitudes of an individual in the field of landscaping in accordance with industry standards. It covers core competencies such as: perform site clearing and grubbing activities, perform rough grading operations, perform site preparation activities, install plants at designated locations as designed, install plant support, Trim and prune landscape plants, perform weeding and cultivation, apply fertilizer(nutrition), water plants, control and prevent plant pest and diseases, provide plant support, perform lawn-grass maintenance, perform re-planting activities and collect, dispose and utilize organic wastes.

BASIC COMPETENCIES (18 Hours)

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Participate in workplace communication	1.1 Obtain and convey workplace information 1.2 Complete relevant work related documents 1.3 Participate in workplace meeting and discussion	<ul style="list-style-type: none"> • Group discussion • Interaction 	<ul style="list-style-type: none"> • Written test • Practical/ performance test • Interview
2. Work in a team environment	2.1 Describe and identify team role and responsibility in a team. 2.2 Describe work as a team member.	<ul style="list-style-type: none"> • Group discussion • Interaction 	<ul style="list-style-type: none"> • Observation • Simulation • Role playing
3. Practice career professionalism	3.1 Integrate personal objectives with organizational goals 3.2 Set and meet work problems 3.3 Maintain professional growth and development	<ul style="list-style-type: none"> • Group discussion • Interaction 	<ul style="list-style-type: none"> • Demonstration • Observation • Interviews/ questioning
4. Practice occupational health and safety	4.1 Evaluate hazards and risks 4.2 Control hazards and risks 4.3 Maintain occupational health and safety awareness	<ul style="list-style-type: none"> • Group Discussion • Plant tour • Symposium 	<ul style="list-style-type: none"> • Observation • Interviews

**COMMON COMPETENCIES
(14 Hours)**

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Apply safety measures in farm operations	1.1. Determine areas of concern for safety measures 1.2. Apply appropriate safety measures 1.3. Safe keep/maintain/dispose tools, materials and outfit.	<ul style="list-style-type: none"> • Self-paced/modular • Lecture/Discussion • Interaction • Practical Demonstration • Visit/tour 	<ul style="list-style-type: none"> • Oral/Written Interviews • Direct Observation • Practical Demonstration
2. Use farm tools and equipment	2.1. Prepare and use farm tools 2.2. Prepare and operate farm equipment 2.3. Perform preventive maintenance procedures/practices	<ul style="list-style-type: none"> • Self-paced/modular • Lecture/Discussion • Interaction • Practical Demonstration • Visit/tour 	<ul style="list-style-type: none"> • Oral/Written Interviews • Direct Observation • Practical Demonstration
3. Perform estimation and basic calculation	3.1. Perform estimation 3.2. Perform basic workplace calculation 3.3. Apply corrective measures as necessary	<ul style="list-style-type: none"> • Self-paced/modular • Lecture/Discussion • Interaction • Practical Exercise 	<ul style="list-style-type: none"> • Oral/Written examination • Practical exercise

**CORE COMPETENCIES
(180 Hours)**

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Provide site clearing and grubbing activities	1.1. Clear site 1.2. Dispose waste 1.3. Perform post-clearing site and grubbing activity	<ul style="list-style-type: none"> • Discussion • Demonstration • Practical application • Field trip 	<ul style="list-style-type: none"> • Demonstration of practical skills • Written examination • Interview
2. Perform rough grading operations	2.1. Rough grade site 2.2. Provide surface drainage and shape or form the land 2.3. Perform post-rough grading operations	<ul style="list-style-type: none"> • Discussion • Demonstration • Practical application • Field trip 	<ul style="list-style-type: none"> • Demonstration of practical skills • Written examination • Interview
3. Perform land preparation	3.1. Cultivate land 3.2. Remove construction debris and other materials 3.3. Add amended soil / soil mix to cultivated land 3.4. Find grade and compact cultivated land 3.5. Perform post-land preparation activities	<ul style="list-style-type: none"> • Discussion • Demonstration • Practical application • Field trip 	<ul style="list-style-type: none"> • Demonstration of practical skills • Written examination • Interview
4. Install plants at designated locations as designed	4.1. Inspect plants 4.2. Lay-out or stake out plants 4.3. Excavate hole / 4.4. Install plants 4.5. Apply fertilizers 4.6. Water plants 4.7. Apply / install mulch 4.8. Perform post landscape installation activities	<ul style="list-style-type: none"> • Discussion • Demonstration • Practical application 	<ul style="list-style-type: none"> • Demonstration of practical skills • Written examination • Interview
5. Install plant support	5.1. Install stake or staking 5.2. Install plant guy or guying 5.3. Install plant props / bracing or propping bracing	<ul style="list-style-type: none"> • Discussion • Demonstration • Practical application 	<ul style="list-style-type: none"> • Demonstration of practical skills • Written examination • Interview
6. Trim and prune landscape plant	6.1. Identify trimming and pruning requirements 6.2. Prepare for trimming and pruning operations 6.3. Perform trimming and pruning 6.4. Perform post-trimming and pruning activity	<ul style="list-style-type: none"> Discussion • Demonstration • Practical application 	<ul style="list-style-type: none"> • Demonstration of practical skills • Written examination • Interview

7. Perform weeding and cultivation	<p>7.1. Identify requirements for weeding and cultivation activity</p> <p>7.2. Prepare for weeding and cultivation operations</p> <p>7.3. Conduct weeding and removal of volunteer species</p> <p>7.4. Identify compacted soil</p> <p>7.5. Cultivate compacted soil</p> <p>7.6. Perform post-weeding and soil cultivation activity</p>	<ul style="list-style-type: none"> • Discussion • Demonstration • Practical application 	<ul style="list-style-type: none"> • Demonstration of practical skills • Written examination • Interview
8. Apply fertilizer	<p>8.1. Identify fertilizer application requirements</p> <p>8.2. Prepare for fertilizer application activity</p> <p>8.3. Perform fertilizer application activity</p> <p>8.4. Perform post-fertilizer application activities</p>	<ul style="list-style-type: none"> • Discussion • Demonstration • Practical application 	<ul style="list-style-type: none"> • Demonstration of practical skills • Written examination • Interview
9. Water plants	<p>9.1. Identify requirements of watering / irrigating landscape plants</p> <p>9.2. Prepare for watering / irrigation activity</p> <p>9.3. Conduct watering / irrigation of plants</p> <p>9.4. Perform post-watering / irrigation activities</p>	<ul style="list-style-type: none"> • Discussion • Demonstration • Practical application 	<ul style="list-style-type: none"> • Demonstration of practical skills • Written examination • Interview
10. Control and prevent plant pest and diseases	<p>10.1. Identify requirements of preventing and controlling plant pests and diseases</p> <p>10.2. Prepare for application of pest and disease prevention and control measures</p> <p>10.3. Apply pest and disease prevention and control measures</p> <p>10.4. Perform post-pest and disease prevention and control measures</p>	<ul style="list-style-type: none"> • Discussion • Demonstration • Practical application 	<ul style="list-style-type: none"> • Demonstration of practical skills • Written examination • Interview
11. Provide plant support	<p>11.1. Identify requirements for installing plant support</p> <p>11.2. Prepare for installation of plant support</p> <p>11.3. Install plant support</p> <p>11.4. Maintain plant support</p> <p>11.5. Perform post-plant support activities</p>	<ul style="list-style-type: none"> • Discussion • Demonstration • Practical application 	<ul style="list-style-type: none"> • Demonstration of practical skills • Written examination • Interview

12. Perform lawn grass maintenance	12.1. Mow lawn grass 12.2. Irrigate lawn 12.3. Fertilize lawn 12.4. Control pests 12.5. Control weeds	<ul style="list-style-type: none"> • Discussion • Demonstration • Practical application • Field trip 	<ul style="list-style-type: none"> • Demonstration of practical skills • Written examination • Interview
13. Perform re-planting activities	13.1. Identify requirements for removal and re-planting of landscape plants 13.2. Prepare for removal and replacement of landscape plants 13.3. Conduct removal and disposal of landscape plants 13.4. Prepare land / soil for re-planting 13.5. Select right species and size of landscape plants for replacement 13.6. Conduct re-planting activity 13.7. Perform post-removal and re-planting activities	<ul style="list-style-type: none"> • Discussion • Demonstration • Practical application • 	<ul style="list-style-type: none"> • Demonstration of practical skills • Written examination • Interview
14. Collect, dispose and utilize organic waste	14.1. Identify requirements for collection, disposal and utilization of organic waste 14.2. Prepare for collection, segregation, disposal and utilization of organic waste 14.3. Gather and dispose organic waste 14.4. Segregate and process collected organic waste 14.5. Make use of organic waste 14.6. Perform post-disposal and utilization of organic waste	<ul style="list-style-type: none"> • Discussion • Demonstration • Practical application • Field trip 	<ul style="list-style-type: none"> • Demonstration of practical skills • Written examination • Interview

3.2 TRAINING DELIVERY

The delivery of training should adhere to the design of the curriculum. Delivery should be guided by the 10 basic principles of competency-based TVET.

- The training is based on curriculum developed from the competency standards;
- Learning is modular in its structure;
- Training delivery is individualized and self-paced;
- Training is based on work that must be performed;
- Training materials are directly related to the competency standards and the curriculum modules;
- Assessment is based in the collection of evidence of the performance of work to the industry required standard;
- Training is based both on and off-the-job components;
- Allows for recognition of prior learning (RPL) or current competencies;
- Training allows for multiple entry and exit; and
- Approved training programs are nationally accredited.

The competency-based TVET system recognizes various types of delivery modes, both on and off-the-job as long as the learning is driven by the competency standards specified by the industry. The following training modalities may be adopted when designing training programs:

- The dualized mode of training delivery is preferred and recommended. Thus programs would contain both in-school and in-industry training or fieldwork components. Details can be referred to the Practical application System (DTS) Implementing Rules and Regulations.
- Modular/self-paced learning is a competency-based training modality wherein the trainee is allowed to progress at his own pace. The trainer facilitates the training delivery
- Peer teaching/mentoring is a training modality wherein fast learners are given the opportunity to assist the slow learners.
- Supervised industry training or on-the-job training is an approach in training designed to enhance the knowledge and skills of the trainee through actual experience in the workplace to acquire specific competencies prescribed in the training regulations.
- Distance learning is a formal education process in which majority of the instruction occurs when the students and instructor are not in the same place. Distance learning may employ correspondence study, or audio, video or computer technologies.

3.3 TRAINEE ENTRY REQUIREMENTS

Trainees or students should possess the following requirements:

- can communicate both orally and in writing in English;
- between ages 18 - 40 yrs
- physically and mentally fit;
- with good moral character; and
- can perform basic mathematical computation.

This list does not include specific institutional requirements such as educational attainment, appropriate work experience, and others that may be required of the trainees by the school or training center delivering the TVET program.

3.4 LIST OF TOOLS, EQUIPMENT AND MATERIALS LANDSCAPE INSTALLATION AND MAINTENANCE (SOFTSCAPE) – NC II

Recommended list of tools, equipment and materials for the training of 25 trainees for **Landscape Installation and Maintenance – NC II**

TOOLS		EQUIPMENT		MATERIALS	
QTY		QTY		QTY	
25 pcs	Pruning shear or secateur	2 pcs	Chain saw	1 bag for each type	Fertilizers
5 pcs	Loping shear				
25 pcs	Pruning saw	2 pcs	Telescopic shaft or power high branch pruner	1 sample for each	Pesticides
5 pcs	Bow saw			25 pcs	Gloves
5 pcs	Tree or pole pruner	2 pcs	Power hedge trimmer	25 pcs	Ear masks/ Muff/plug
25 pcs	Hedge trimmer	1 pc	One-man soil auger	25 pcs	Goggles
13 pcs	Spade	1 pc	Two-man soil auger	5 pcs @ 10 meters long	Garden hose with complete accessories
13 pcs	Shovel				
5 pcs	Hole digger	1 unit	Dump truck (Own or rent)	13 pcs	Reflectorized vest
5 pcs	Wheel barrow	1 unit	Boom or power sprayer (Own or rent)	.25 pcs	Overall /working clothes

5 pcs	sprayer	1 unit	Crane or boom truck (Own or rent)	25 pcs	Gas mask
25 pcs	Mallet				
25 pcs	Hammer	13 pcs	Grass cutter	25 pcs	Raincoat
25 pcs	Stone rake				
25 pcs	Leaf rake	2 pcs	4.5 HP lawn mover	25 pcs	Boots
5 pcs	Gun tacker				
13 pcs	Rake	1 unit	Chipper / Shredder	5 pcs	Safety shoes
5 pcs	Roller	1 unit	Mechanical compactor	5 pcs	Safety belt
25 pcs	Hand trowel			5 pcs	Climbing ropes
5 pcs	Soil drencher (accessory to the garden hose)	1 unit	Blower	25 pcs	Hard hat
25 pcs	Fork			1 bag (25 kg)	Soil mix
2 units	Sand /Soil Sieve (standard size)			Sample, 5 each.	Stakes (wooden- square/ round; steel, bamboo; plastic
25 pcs	Meter tape (5 m)			13 units	Tree support units (G hose, wood stake, GI wire, GI nails, burlap pads, etc
5 pcs	Meter tape (50 m)			13 units	Guy materials (GI wire, GI or wooden pegs, G hose, etc.)
5 pcs	Ladder / Adjustable ladder (24 ft)			1 bag each	Mulch (decorative stone, crushed bricks, bark chips, etc)
13 pcs	Mattock pick			25 pcs	Safety apron

3.5 TRAINING FACILITIES LANDSCAPE INSTALLATION AND MAINTENANCE (SOFTSCAPE) – NC II

The workshop must be made of reinforced concrete or steel structure. The size must be suited on the requirements of the competencies. The facility should accommodate a minimum of 25 students/trainees.

SPACE REQUIREMENT	SIZE IN METERS	AREA IN SQ. METERS	TOTAL AREA IN SQ. METERS
Workshop Component Areas			
• Laboratory/Workshop Area	-	-	100.00
• Lecture Room	5.00 x 5.00	25.00	25.00
• Tool, Supply & Storage Room	3.00 X 3.00	9.00	9.00
• Learning Resource Center	2.00 x 5.00	10.00	10.00
• Wash Room and Toilet	2.00 X 5.00	10.00	10.00
Total (Workshop Component)			154.00
• Circulation Area (30% of Workshop Component Space)			40.00
Grand Total (Building Space)			194.00

Note: The entries in the size in meters column are recommendations only. The grand total (building space) is the minimum space requirement for registration.

3.6 TRAINERS' QUALIFICATION AGRICULTURE AND FISHERY SECTOR

LANDSCAPE INSTALLATION AND MAINTENANCE (SOFTSCAPE) – NC II TRAINER QUALIFICATION (TQ II)

- Must be a holder of Landscape Installation and Maintenance (Soft Scape) NC II or equivalent qualification
- Must have undergone training on Training Methodology II (TM II) or equivalent in training/experience
- Must be computer literate
- Must be physically and mentally fit
- *Must have at least 2 years job/industry experience
- Must be a civil service eligible (for government position) or holder of appropriate professional license issued by the Professional Regulatory Commission

* Optional. Only when required by the hiring institution.
Reference: TESDA Board Resolution No. 2004 03

3.7 INSTITUTIONAL ASSESSMENT

Institutional assessment is undertaken by trainees to determine their achievement of units of competency. A certificate of achievement is issued for each unit of competency.

SECTION 4 NATIONAL ASSESSMENT AND CERTIFICATION ARRANGEMENTS

- 4.1 To attain the National Qualification of **Landscape Installation and Maintenance (Soft Scape) NC II**, the candidate must demonstrate competence in all units listed in Section 1. Successful candidates shall be awarded a National Certificate signed by the TESDA Director General.
- 4.2 The qualification of **Landscape Installation and Maintenance (Soft Scape) NC II** may be attained through demonstration of competence using project-based assessment covering all the required units of qualification.
- 4.2.1. Accumulation of Certificates of Competency (COCs) in the following areas:
- 4.2.1.1 Installation / Construction
- Provide site clearing and grubbing activities
 - Perform rough grading operations
 - Perform site preparation activities
 - Install plants at designated locations as designed
 - Install plant support
- 4.2.1.2 Maintenance
- Trim and prune landscape plant
 - Perform weeding and cultivation
 - Apply fertilizer (Nutrition)
 - Water plants
 - Control and prevent plant pests and diseases
 - Provide plant support
 - Perform lawn grass maintenance
 - Perform re-planting activities
 - Collect, dispose and utilize organic waste
- Successful candidates shall be awarded Certificates of Competency (COCs) bearing the signature of the Regional Director and Chair of the recognized local industry body.
- 4.3. Accumulation and submission of all COCs acquired for the relevant units of competency comprising a qualification, an individual shall be issued the corresponding National Certificate.
- 4.4. Assessment shall focus on the core units of competency. The basic and common units shall be integrated or assessed concurrently with the core units.
- 4.5. The following are qualified to apply for assessment and certification:
- 4.5.1 Graduates of formal, non – formal and informal including enterprise – based training programs
- 4.5.2 Experienced workers (wage employed or self – employed)
- 4.6 The guidelines on assessment and certification are discussed in detail in the Procedures Manual on Assessment and Certification and Guidelines on the Implementation of the Philippine TVET Qualification and Certification System (PTQCS).

**Supermarket of Competencies
AGRI-FISHERY (Landscaping) Sector**

CORE COMPETENCIES	Provide site clearing and grubbing activities	Apply mulch materials	Perform weeding and cultivation	Perform lawn grass maintenance	Manage landscape projects	Prepare specialized interpretive content	Support turf establishment	Implement a landscape maintenance program	Establish and maintain railway Landscape garden	
	Perform rough grading operations	Install plant support	Control and prevent pest plant pest and diseases	Perform re-planting activities	Prepare a Landscape project design	Supervise landscape project works	Transplant small trees	Implement a paving project	Guide bushwalks in unmodified landscapes	
	Perform site preparation activities	Trim and prune landscape plant	Water plants	Collect, dispose and utilize organic waste	Prepare a garden design	Support landscape work	Set out landscape works	Design landscape structures and features	Construct stone structures and features	
	Install plants at designated locations as	Apply fertilizer (Nutrition)	Provide plant support	Provide general ground care	Prepare detailed designed of landscaping	Supervise landscape planting works	Assist in landscape construction work	Develop and implement a grounds maintenance prog.	Construct an outdoor recreation area access audit	
COMMON COMPETENCIES	Apply Safely Measures	Use Farm Tools and Equipment	Perform Estimation and Basic Calculation	LANDSCAPING NC II						
BASIC COMPETENCIES	Receive and respond to workplace communication	Work with others	Demonstrate work values	Practice housekeeping procedures (5S)	Participate in workplace communication	Work in team environment	Practice career professionalism	Practice occupational health and safety procedures	Lead workplace communication	Lead small teams
	Develop and practice negotiation skills	environment Solve problems related to work activities	Use mathematical concepts and techniques	Use relevant technologies	Utilize specialized communication skills	Develop teams and individuals	Apply problem-solving techniques in the workplace	Plan and organize work	Collect, analyze and organize information	Promote environmental protection

DEFINITION OF TERMS

1. Acidic soils - are commonly referred to as "sour." Acidity is the characteristic of soils that have a pH level of less than 7. Such a low pH is suited to plants that thrive in acidic soil (as opposed to alkaline or "sweet" soil), including the delightful 'Minuet' laurel shrubs.
2. Aesthetic - pertaining to the appreciation of beauty or good taste, "aesthetic" means visually pleasing. The noun that corresponds to "aesthetic" is "aesthetics," which means the study of the appreciation of beauty. Landscape design is concerned both with aesthetic and functional elements of landscaping.
3. Alkalinity - is the characteristic of soils with a pH level that is greater than 7, which is suitable for plants that thrive in a "sweet" (alkaline) soil, as opposed to a "sour" or acid soil. If soil pH needs to be raised (i.e., the soil isn't alkaline enough), apply lime.
4. Arboriculture - is the art, science, technology and business of tree care. Arboriculture is practiced by arborists. Arborists are trained to promote tree health, discern tree problems and take measures to correct them
5. Balance - refers to the consistency of visual attraction, or lack thereof. Consistent visual attraction is achieved through symmetry; if the designer's intention is to avoid the monotony of this kind of balance, asymmetrical plans will be implemented, instead. Note that, while it may seem a contradiction in terms to novices, landscape designers do speak of "asymmetrical balance," as well as of "symmetrical balance."
6. Bedding plants - are plants (usually annuals) massed with others to produce the maximum in visual appeal. With an eye to the five basic elements of landscape design (color, scale, line, form and texture), a landscape designer skillfully arranges each bedding plant in relation to the accompanying annuals, perennials, shrubs and trees. By browsing the pictures in the following resource, you can learn more about how to use the five basic elements of landscape design:
7. Biodegradable - means capable of being decomposed back into the soil by biological agents, especially bacteria. "Biodegradable" is often used to refer to items that are to be disposed of. Environmentally sound landscaping and gardening often takes into account whether materials are biodegradable. For instance, plastic might be rejected as a material for mulching because it is not biodegradable.
8. Color theory - is a complex study, and I present only a sampling here, to show how it is used in landscape design. For instance, according to color theory, the spectrum is often divided into 4 categories: Primary: reds, yellows and blues, Secondary: greens, violets (purples) and oranges, Tertiary: Mixtures of the primary and secondary categories and Neutral: White, grays and silvers.
9. The spectrum is often represented as a wheel, divided into slices that stand for the various hues (colors). Using color theory, landscapers may refer to this wheel to choose adjacent colors in the spectrum, in order to provide unity; or they may deliberately juxtapose items directly across from each other on the wheel to make a contrast.

10. Complete fertilizers - are so called because they contain nitrogen, phosphorus and potassium, the Big 3 in fertilizer ingredients. A fertilizer listed as "10-10-10," for instance, would be a complete fertilizer. But a fertilizer listed as "10-0-10" would not be a complete fertilizer, the middle zero indicating the absence of phosphorus in the fertilizer.
11. Cotyledon leaves - are the leaves of the embryo of a seed plant, which, upon germination, either remain in the seed or emerge, enlarge, and become green. Cotyledon leaves are also called "false leaves" or "seed leaves," in contradistinction to the first "true leaves" which develop later.
12. Cover crops - are plants that are primarily planted not to be harvested for food but for soil erosion control, weed control and improving soil quality while the garden is otherwise dormant. A cover crop is usually ploughed or tilled under before the next food crop is planted, in which cases the "cover crop" is used as a soil amendment and is synonymous with "green manure crop." In its capacity to control weeds it is designated a "living mulch." From the landscape designer's perspective, the choice between various cover crops could be influenced by aesthetics, since the cover crop is, after all, taking the place of garden plants in between growing seasons.
13. Dethatching - is the mechanical removal from a lawn of the layer of dead turfgrass tissue known as "thatch." Raking *deeply* when you rake leaves in the fall is an easy step you can take towards dethatching.
14. Dry wall - is a wall of stones that is not held together by mortar. Dry-wall construction requires greater precision in the way stones are stacked than does mortared-wall construction, since proper placement alone keeps the wall intact.
15. Edging - is a line of demarcation that creates visual interest in a landscape by separating one segment from another.
16. Evergreen - means having foliage that persists and retains its color throughout the year, rather than changing color according to the seasons. The term, "evergreen" is something of a misnomer, as the color in question needn't be green.
17. Finials - are the small, ornamental, terminal features at the top of a gable, fence post, lamp, lamppost, stone wall, etc. Finials are optional, being non-structural elements: their job is aesthetic, giving a "finished" touch to a hardscape feature
18. Forcing - is the process of causing a plant to flower before its natural season. For instance, many people eager for Old Man Winter's exit force forsythia flowers in February or March. Forcing pussy willows is another common pastime in late winter.
19. Gazebo - is a small roofed outbuilding erected for outdoor dining and entertaining. This hardscape feature is often octagonal, with open, screened, or latticework sides. The plural form of the term, gazebo is given either as "gazebos" or "gazeboes."

20. Grafting - is the uniting of a shoot or bud (the scion) with a plant (the rootstock) that is already established, either by insertion or by placing them in close contact. One danger of grafting is girdling. Grafting is a common procedure in the development of fruit tree stock.
21. Hardening off plants - is the process, undertaken in spring in the temperate zone, of preparing plants started indoors for the change in environmental conditions they will encounter when permanently moved outdoors. Without allowing plants to harden off, they will be negatively impacted by the sudden shock of exposure to daytime's sunrays and nighttime's coolness. The process of hardening off plants involves a transitional period in which plants are left outside during daylight hours only and in an area where they can be shaded and protected from wind. Having a cold frame facilitates hardening off, but it is not essential that you have a cold frame. Watering is reduced as well during the hardening off period. Gradually, the plant is allowed exposure to an increasing amount of sunlight and allowed to stay out later and later.
22. Herbaceous plants- are plants with non-woody stems. Their above-ground growth usually dies back in winter in the temperate zone, even in cases where the herbaceous plants in question are perennials. All "annual" plants are "herbaceous," but not all herbaceous plants are annuals. An "annual" is a plant that dies altogether at the end of the growing season, both above the ground and below it. "Perennials," by contrast, survive the winter, even if their above-ground growth dies back.
23. Hybrid plants - are plants produced by impregnating the pistil of one species with the pollen of another.
24. Integrated pest management, or IPM - is the management of pest problems that involves use of the full spectrum of control measures in a coordinated, integrated and foresighted manner. A cornerstone of IPM is the idea that taking preventive steps to preclude a pest problem is preferable to waiting for pests to arrive and then having to eradicate them.
25. Landscape architecture - is the profession that practices the art of arranging or modifying the features of a landscape, an urban area, etc., for aesthetic or practical purposes.

Landscape architecture must be distinguished from landscape design. The American Society of Landscape Architects asserts that someone who makes a career of "landscape architecture," properly speaking, possesses a higher level of skill, usually reinforced by a degree, than is possessed by a "landscape designer." Degrees and professional status notwithstanding, it is still accurate to say that members of the landscape architecture profession do practice landscape design.

26. Landscaping - can be used grammatically either as a noun or as the present participle of a verb. In the latter case, "landscaping" either can take an object (transitive) or go without one (intransitive). For example, I can say either "I am landscaping to increase the value of my property" (intransitive) or "I am landscaping my property to increase its value (transitive). Either way, the noun, "landscaping" derives from the participial use and designates the process or result of such an action.

27. Mulch - is a covering placed around plants (or covering the ground in lieu of plants), to prevent the growth of weeds. If placed around plants, a mulch provides additional benefits, including the diminution of erosion and water loss, and the regulation of soil temperature. In addition, upon decomposition (for organic mulches), mulches serve as soil amendments. Mulch selection is usually based on appearance, as well as on all the practical considerations mentioned above.
28. Naturalized plants - are plants established as a part of the flora of a locale other than their place of origin. When a plant naturalizes in an area, this can be either a "good" or a "bad" thing, depending on your opinion of the particular naturalized plant.
29. Soil pH - is the measure of the acidity or alkalinity of a soil, numerically equal to 7 for soils with a neutral pH, increasing with rising alkalinity and falling with increasing acidity. The soil pH scale commonly in use ranges from 0 to 14. Soil pH is not fixed; you can take measures to alter soil pH. If soil pH needs to be lowered (i.e., the soil isn't acidic enough), apply sulfur or commercial fertilizers containing ammonium-N. If soil pH needs to be raised (i.e., the soil isn't alkaline enough), apply lime
30. Shrubs - are low woody plants, usually with multiple shoots or stems from the base (height of 15 feet or less). A planting of shrubs is called "shrubbery."
31. Softscape - comprises the animate, horticultural elements of landscape design, i.e., plants. Softscape elements are complemented by hardscape design elements, such as stone walls, tile patios and brick walkways.
32. Tendrils - are twisting, threadlike structures by which true climbers, such as grape vines or cucumber vines, grasp an object for support. Vines with tendrils will climb on their own, without being trained. In some cases, however, you will still want to tie vines to arbors, pergolas, latticework or other structures even if they do have tendrils, in order to cause the plant to climb precisely where you wish it to grow.
33. Lawn thatch - is the layer of dead turfgrass tissue between the green vegetation and the soil surface that must be removed (a process known as "dethatching") to maintain lawn health. Lawn thatch is derived from stems, leaves, stolons, rhizomes and roots.
34. Xeriscape landscaping - is landscaping designed specifically for areas that are susceptible to drought, or for properties where water conservation is practiced. Derived from the Greek *xeros* meaning "dry," the term, xeriscape means literally "dry landscape."

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THE TECHNICAL AND INDUSTRY EXPERT PANEL

Dr. RODOLFO P. ESTIGOY

Chief
Bureau of Post-Harvest Research and Extension
Central Luzon State University (CLSU)
Muñoz, Nueva Ecija

Col. ALEJANDRO T. ESCAÑO

President
Philippine Chamber of Agriculture and Food, Inc. (PCAFI)
MFI Bldg., Ortigas Avenue Extension
Pasig City

Mr. EDWIN ANDOT

President
Chamber of Agriculture, Fisheries and Food in
Northern Mindanao
2nd Floor, United Way Bldg.
Capitol Cmpd., Cagayan de Oro City

Dr. ALMA M. DELA CRUZ

Professor
Central Luzon State University (CLSU)
Muñoz, Nueva Ecija

Dr. FERNANDO C. SANCHEZ, JR., PhD

Asst. to the Vice Chancellor for Planning & Dev't
Associate Professor, Crop Science Cluster
College of Agriculture
U.P. Los Baños, Laguna

Mr. SALVADOR R. BAUTISTA

Landscaping Project Coordinator
Villa Escudero Plantation and Resort
San Pablo City

Dr. ARMANDO M. PALIJON PhD

Professor
College of Forestry and Natural Resources
U.P. Los Baños, Laguna

Ms. MARY ANN A. ESPINA

Associate Professor
Landscape Design / Architecture
U.P. Diliman, Quezon City

Ms. PATRICIA F. REGALADO

President
Philippine Horticultural Society, Inc.
MSBF Environment Center
Quezon Ave., cor. EDSA
Quezon City

Mr. RAYMUNDO G. ONG

Head, Technical Work Group
Philippine Horticultural Society, Inc.
MSBF Environment Center
Quezon Ave., cor. EDSA
Quezon City

The PARTICIPANTS in the Validation of this Training Regulation

Eladio S. Sebastina	Garden City multipurpose Cooperative (GCMPC)
Melodia Ramos Sampan	Bulacan State University (BSU)
Genciano P. Pangan	Symon's Garden
Laurence M. Marcelo	Louie's Garden
Aurora Calayag	Joseph's Garden
Lorenzo E. Sampan	BSU
Philip C. Santiago	GCMPC
Lucila C. Santiago	GCMPC
Adel Luis De Guzman	GCMPC
Valentina P. Miranda	Belen's Gardne
Prency O. Calonzo	GCMPC
Rex R. Lizarondo	GCMPC
Eduardo P. Jose	Guiguinto Municipal Agricultural Office
Suzette D. Santiago	GCMPC
Reynaldo E. Robles	GCMPC
Jessalyn B. Jesalva	GCMPC
Evelyn B. Gesalva	GCMPC
Shirley D. Garcia	GCMPC
Jane Anne C. Manuel	BSU
Melvin B. Buenavista	GCMPC
Natividad T. Camuz	GCMPC
Rosallie G. Landayan	GCMPC
Lucila C. Bermudez	GCMPC
Arsenio P. De Guzman, Jr.	APG Garden
Teodoro C. Marquez	Marquez Garden
Felipe S. Pangan	4 F Garden
Emma A. Macasaet	Macasaet Garden
Isagani L. Nista	J'Fels Gardne
Reynaldo M. Panganganan	Global Gardne
Leonardo P. Hernandez	Leolens' Garden
Antonio C. Buenavista	Jardin de Buenavista
Particia F. Ignacio	Wonder Green Garden (WGG)
Heidi C. Sebastian	KMS Garden Center
Gildbert E. Benedictos	Twisted Fern Garden
Gregorio M. Guerra	WGG

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For more information please contact:

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY (TESDA)

Telephone Nos.: 893-8303, 893-2139; 817-4076 to 82 loc. 615 to 617

or visit our website: www.tesda.gov.ph