

TRAINING REGULATIONS



BAMBOO PRODUCTION NC II

AGRICULTURAL, FORESTRY AND FISHERY SECTOR

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
East Service Road, South Luzon Expressway, 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 Regulation (TR) serve 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:

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| 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, equipment and materials; training facilities; trainer's qualification; and institutional assessment. |
| Section 4 | National Assessment and Certification Arrangement - describes the policies governing assessment and certification procedure. |

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TRAINING REGULATIONS FOR BAMBOO PRODUCTION NC II

SECTION 1. BAMBOO PRODUCTION NC II

The **BAMBOO PRODUCTION NC II** Qualification consists of competencies that bamboo farmer, or bamboo nursery operator to operate bamboo nursery, establish bamboo farm, conduct bamboo clump rehabilitation and conduct harvesting and post-harvesting operations. It also includes competencies in practicing safety measures, operating simple equipment and using various tools for (small scale to large scale) bamboo farmer and bamboo farm owner.

This Qualification is packaged from the competency map of the Agricultural, Forestry 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 a team environment
500311107	Practice career professionalism
500311108	Practice occupational health and safety procedures

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

CODE	CORE COMPETENCIES
AFF611310	Operate bamboo nursery
AFF611311	Establish bamboo farm
AFF611312	Conduct bamboo clump rehabilitation
AFF611313	Conduct harvesting and post-harvesting operations

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

- Bamboo farmer**
- Bamboo nursery worker**
- Bamboo farm worker**
- Bamboo clump rehabilitation worker**
- Bamboo harvesting and post harvesting worker**

SECTION 2. COMPETENCY STANDARDS

This section gives the details of the contents of the basic, common and core units of competency required in **BAMBOO PRODUCTION 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	REQUIRED KNOWLEDGE	REQUIRED SKILLS
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.	<ul style="list-style-type: none"> • Procedure of gathering workplace information • Techniques in gathering information • Effective methods of conveying information • Written communication methods • Techniques in conveying communication • Different modes of communication • Organizational policies • Communication procedures and systems • Technology relevant to the enterprise and the individual's work responsibilities 	<ul style="list-style-type: none"> • Gathering of workplace information skills • Sourcing of information skills • Sorting of information skills • Obtaining workplace information skills • Conveying workplace information skills • Gathering and providing information in response to workplace requirements
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	<ul style="list-style-type: none"> • Effective communication • Different modes of communication • Written communication • Organizational policies 	<ul style="list-style-type: none"> • Participating skills in workplace meetings and discussions • Following simple spoken language • Completing work related documents • Estimating, calculating and

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	<p>meeting purpose and established protocols.</p> <p>2.4 Workplace interactions are conducted in a courteous manner.</p> <p>2.5 Questions about simple routine workplace procedures and matters concerning working conditions of employment are asked and responded to.</p> <p>2.6 Meetings outcomes are interpreted and implemented.</p>	<ul style="list-style-type: none"> • Communication procedures and systems • Decorum in participating workplace meetings and discussions 	<p>recording routine workplace measures</p> <ul style="list-style-type: none"> • Relating to people of social range in the workplace • Gathering and providing information in response to workplace Requirements
3. Complete relevant work related documents	<p>3.1 Range of forms relating to conditions of employment is completed accurately and legibly.</p> <p>3.2 Workplace data is recorded on standard workplace forms and documents.</p> <p>3.3 Basic mathematical processes are used for routine calculations.</p> <p>3.4 Errors in recording information on forms/ documents are identified and properly acted upon.</p> <p>3.5 Reporting requirements to supervisor are completed according to organizational guidelines.</p>	<ul style="list-style-type: none"> • Methods of making/completing work related documents • Company standards and procedures in making work related documents • Effective communication • Different modes of communication • Written communication • Organizational policies • Communication procedures and systems • Technology relevant to the enterprise and the individual's work responsibilities 	<ul style="list-style-type: none"> • Documenting skills • Report writing skills • Making/developing work related documents • Perform routine workplace duties following simple written notices • Completing work related documents • Estimating, calculating and recording routine workplace measures • Ability to relate to people of social range in the workplace

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 5.2 Telephone 5.3 Electronic and two way radio 5.4 Written including electronic, memos, instruction and forms, non-verbal 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

1. Critical aspects of Competency	<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
2. Resource Implications	<p>The following resources <u>MUST</u> be provided:</p> <ul style="list-style-type: none"> 2.1 Fax machine 2.2 Telephone 2.3 Writing materials 2.4 Internet
3. Methods of Assessment	<p>Competency in this unit must be assessed through:</p> <ul style="list-style-type: none"> 3.1 Direct Observation 3.2 Oral interview and written test
4. Context for Assessment	<ul style="list-style-type: none"> 4.1 Competency may be assessed individually in the actual workplace or through accredited institution

UNIT OF COMPETENCY: WORK IN A 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	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Describe team role and scope	1.1 The role and objective of the team is identified from available sources of information . 1.2 Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources.	<ul style="list-style-type: none"> • Company vision/mission statements • Company policies and employee code of conduct • Communication process • Team structure • Team roles • Group planning and decision making 	<ul style="list-style-type: none"> • Communicating skills appropriately and consistent with the culture of the workplace • Adopting skills to team role and scope of responsibilities
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.	<ul style="list-style-type: none"> • Company vision/mission statements • Company policies and employee code of conduct • Communication process • Team structure • Team roles • Group planning and decision making • Methods and techniques of role and responsibility identification with a team 	<ul style="list-style-type: none"> • Communicating skills appropriately and consistent with the culture of the workplace • Role and responsibility identification skills
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	<ul style="list-style-type: none"> • Approaches of interacting with team members • Types of communications used in effective interaction with team members • Methods of working as a team • Techniques in working as a team 	<ul style="list-style-type: none"> • Team working skills • Communicating skills appropriately and consistent with the culture of the workplace • Skills in observing protocols when making reports • Using standard procedures when making reports • Developing teamwork plans

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	<p>objectives, based on individual skills and competencies and <i>workplace context</i>.</p> <p>3.3 Observed protocols in reporting using standard operating procedures.</p> <p>3.4 Contribute to the development of team work plans based on an understanding of team's role and objectives and individual competencies of the members.</p>		based on team's role and objectives

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 maybe 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 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

1. Critical aspects of competency	<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
2. Resource implications	<p>The following resources <u>MUST</u> be provided:</p> <ul style="list-style-type: none"> 2.1 Access to relevant workplace or appropriately simulated environment where assessment can take place 2.2 Materials relevant to the proposed activity or tasks
3. Method of assessment	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Observation of the individual member in relation to the work activities of the group 3.2 Observation of simulation and or role play involving the participation of individual member to the attainment of organizational goal 3.3 Case studies and scenarios as a basis for discussion of issues and strategies in teamwork
4. Context of assessment	<ul style="list-style-type: none"> 4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 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 are elaborated in the Range of Variables</i>	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2 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 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.	<ul style="list-style-type: none"> • Work values and ethics (Code of Conduct, Code of Ethics, etc.) • Company policies • Company operations, procedures and standards • Company mission/vision statements • Ways of integrating personal objectives with organizational goals 	<ul style="list-style-type: none"> • Integrating skills of personal objectives with organizational goals • Pursuing personal growth and work plans • Demonstrating commitment to the organization and its goals • Intra and Interpersonal skills
3 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.	<ul style="list-style-type: none"> • Company policies • procedures and standards • Company and departmental goals and priorities • Managing priorities and commitments • Economic use and maintenance of equipment and facilities • Ways and means of practicing economic use and maintenance of equipment and facilities 	<ul style="list-style-type: none"> • Setting skills of work priorities • Meeting with work priorities • Intra and Interpersonal skills • Communication skills
4 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	<ul style="list-style-type: none"> • Ways of identifying trainings and career opportunities • Techniques of seeking and receiving recognitions 	<ul style="list-style-type: none"> • Identifying trainings and career opportunities • Seeking recognitions are sought/received and demonstrated as

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms are elaborated in the Range of Variables</i>	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	3.3 demonstrated as proof of career advancement. <i>Licenses and/or certifications</i> relevant to job and career are obtained and renewed.	<ul style="list-style-type: none"> • Procedures of obtaining licenses and/or certifications relevant to the job 	proof of career advancement <ul style="list-style-type: none"> • Obtaining and renewing Licenses and/or certifications relevant to job and career

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

1. Critical aspects of competency	<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
2. Resource implications	<p>The following resources <u>MUST</u> be provided:</p> <ul style="list-style-type: none"> 2.1 Workplace or assessment location 2.2 Case studies/scenarios
3. Method of assessment	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Portfolio Assessment 3.2 Interview 3.3 Simulation/Role-plays 3.4 Observation with questioning 3.5 Third Party Reports 3.6 Exams and Tests
4. Context of assessment	<ul style="list-style-type: none"> 4.1 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	REQUIRED KNOWLEDGE	REQUIRED SKILLS
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.	<ul style="list-style-type: none"> • Company workplace safety regulations • Industry hazard control practices and procedures • Internationally recognized OHS procedures and practices and regulations • PPE types and uses • Personal hygiene practices • Hazards/risks identification and control • Threshold Limit Value - TLV • OHS indicators • Organization safety and health protocol • Safety consciousness • Health consciousness 	<ul style="list-style-type: none"> • Clarifying and explaining safety regulations and workplace safety and hazard control • Identifying hazards/risks in the workplace and their corresponding indicators • Recognizing contingency measures during workplace accidents, fire and other emergencies • Practice of personal hygiene • Interpersonal skills • Communication skills
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	<ul style="list-style-type: none"> • Methods of identifying terms of maximum tolerable limits • Hazard effects • Reporting methods on OHS issues/concerns • OHS procedures and practices and regulations • PPE types and uses 	<ul style="list-style-type: none"> • Identifying terms of maximum tolerable limits • Determining effects of hazards and risks • Reporting OHS issues and/or concerns • Identifying safety hazards • Hazards/risks identification and control skills

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	<p>personnel in accordance with workplace requirements and relevant workplace OHS legislation.</p>	<ul style="list-style-type: none"> • Hazards/risks identification and control • Threshold Limit Value -TLV • OHS indicators • Organization safety and health protocol • Safety consciousness • Health consciousness 	<ul style="list-style-type: none"> • Interpersonal skills • Communication skills
<p>3. Control hazards and risks</p>	<p>3.1 Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace are consistently followed.</p> <p>3.2 Procedures for dealing with workplace accidents, fire and emergencies are followed in accordance with organization OHS policies.</p> <p>3.3 Personal protective equipment (PPE) is correctly used in accordance with organization OHS procedures and practices.</p> <p>3.4 Appropriate assistance is provided in the event of a workplace emergency in accordance with established organization protocol.</p>	<ul style="list-style-type: none"> • Ways of following Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace • Ways of following procedures for dealing with workplace accidents, fire and emergencies • Types and use of personal protective equipment (PPE) • OHS procedures and practices and regulations • Methods and techniques in providing appropriate assistance in the event of a workplace emergency • Hazards/risks identification and control 	<ul style="list-style-type: none"> • Following occupational health and safety (OHS) procedures for controlling hazards/risks in workplace • Following procedures for dealing with workplace accidents, fire and emergencies • Using correctly personal protective equipment (PPE) • Providing assistance in the event of a workplace emergency in accordance with established organization protocol
<p>4. Maintain OHS awareness</p>	<p>4.1 Emergency-related drills and trainings are participated in as per established organization guidelines and procedures.</p> <p>4.2 OHS personal records are completed and updated in accordance with workplace requirements.</p>	<ul style="list-style-type: none"> • Participation procedures in emergency-related drills and trainings • Ways of completing and updating OHS personal records • OHS procedures and practices and regulations • OHS indicators 	<ul style="list-style-type: none"> • Participating in emergency-related drills and trainings • Completing and updating OHS personal records

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 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 <ul style="list-style-type: none"> • Psychological factors – over exertion/ excessive force, awkward/static positions, fatigue, direct pressure, varying metabolic cycles • 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 designed) 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> <p>1.1 Explained clearly established workplace safety and hazard control practices and procedures</p> <p>1.2 Identified hazards/risks in the workplace and its corresponding indicators in accordance with company procedures</p> <p>1.3 Recognized contingency measures during workplace accidents, fire and other emergencies</p> <p>1.4 Identified terms of maximum tolerable limits based on threshold limit value- TLV.</p> <p>1.5 Followed Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace</p> <p>1.6 Used Personal Protective Equipment (PPE) in accordance with company OHS procedures and practices</p> <p>1.7 Completed and updated OHS personal records in accordance with workplace requirements</p>
<p>2. Resource implications</p>	<p>The following resources <u>MUST</u> be provided:</p> <p>2.1 Workplace or assessment location</p> <p>2.2 OHS personal records</p> <p>2.3 PPE</p> <p>2.4 Health records</p>
<p>3. Method of assessment</p>	<p>Competency in this unit may be assessed through:</p> <p>3.1 Portfolio Assessment</p> <p>3.2 Interview</p> <p>3.3 Case Study/Situation</p>
<p>4. Context of assessment</p>	<p>4.1 Competency may be assessed in the work place or in a simulated work place setting</p>

COMMON COMPETENCIES

UNIT OF COMPETENCY : APPLY SAFETY MEASURES IN FARM OPERATIONS

UNIT CODE : AGR 321201

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

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
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 tools, materials and outfits are prepared in line with job requirements	<ul style="list-style-type: none"> • Different work tasks in farm operations • Place and time for implementation of safety measures • Different hazards in the workplace • Types of tools, materials and outfits • Preparation of tools, materials and outfits 	<ul style="list-style-type: none"> • Identifying work tasks in farm operations • Determining place and time for implementation of safety measures • Reading labels, manuals and other basic safety information • Identifying effective/functional tools, materials and outfit • Preparing tools, materials and outfits • Discarding defective tools, and materials

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Apply appropriate safety measures	2.1 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 <i>Emergency procedures</i> are known and followed to ensure a safework requirement 2.5 Hazards in the workplace are identified and reported in line with farm guidelines	<ul style="list-style-type: none"> • Uses and functions of tools • Outfits and how to wear it. • Expiration/shelf life of materials • Proper disposal of expired materials • Environmental rules and regulations • Emergency procedures • Hazards identification and reporting • Communication skills • OSHS 	<ul style="list-style-type: none"> • Using tools and materials in the workplace • Wearing of outfits • Observing expiration/shelf life of materials • Disposing of expired materials • Following emergency procedures • Identifying and reporting of hazards in workplace area.
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 manufacturer's recommendation and farm requirements. 3.3 Waste materials are disposed according to manufacturers, government and farm requirements.	<ul style="list-style-type: none"> • Procedures of cleaning used tools and outfits • Label and storage unused materials • Disposal of wastes materials • Manufacturers' recommendation on keeping materials • Environmental rules and regulations 	<ul style="list-style-type: none"> • Cleaning used tools and outfit • Labelling and storing unused materials • Disposing waste materials

RANGE OF VARIABLES

VARIABLE	RANGE
1. Work tasks	Work task may be selected from any of the subsectors: 1.1 Crop Production 1.2 Post-harvest 1.3 Agri-marketing 1.4 Farm Equipment
2. Place	2.1 Stock room/storage areas/warehouse 2.2 Field/farm/orchard
3. Time	3.1 Fertilizer and pesticides application 3.2 Feed mixing and feeding 3.3 Harvesting and hauling
4. Tools, materials and outfits	4.1 Tools 4.1.1 Wrenches 4.1.2 Screw driver 4.1.3 Pliers 4.2 Outfit 4.2.1 Masks 4.2.2 Gloves 4.2.3 Boots 4.2.4 Overall coats 4.2.5 Hat 4.2.6 Eye goggles
5. Emergency procedures	5.1 Location of first aid kit 5.2 Evacuation 5.3 Agencies contract 5.4 Farm emergency procedures
6. Hazards	6.1 Chemical 6.2 Electrical 6.3 Falls

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Determined areas of concern for safety measures</p> <p>1.2 Applied appropriate safety measures according to industry requirements</p> <p>1.3 Prepared tools, materials and outfit needed</p> <p>1.4 Performed proper disposal of used materials</p> <p>1.5 Cleaned and stored tools, materials and outfit in designated facilities</p>
<p>2. Method of Assessment</p>	<p>Competency in this unit must be assessed through:</p> <p>2.1 Practical demonstration</p> <p>2.2 Third Party Report</p>
<p>3. Resource Implications</p>	<p>3.1 Farm location</p> <p>3.2 Tools, equipment and outfits appropriate in applying safety measures</p>
<p>4. Context of Assessment</p>	<p>4.1 Assessment may occur in the workplace or in a simulated workplace or as part of a team under limited supervision</p>

UNIT OF COMPETENCY : USE FARM TOOLS AND EQUIPMENT

UNIT CODE : AGR 321202

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

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Select and use farm tools	1.1 Appropriate farm tools are identified 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 are safely used according to job requirements and manufacturers conditions	<ul style="list-style-type: none"> • Types and uses of farm tools • Characteristics of functional tools • Checking tools for defects/faults • Segregation and reporting defective tools • Uses of tools 	<ul style="list-style-type: none"> • Identifying farm tools for the work • Checking the conditions of tools • Reporting defective tools • Using tools
2. Select and operate farm equipment	2.1 Identify appropriate farm equipment 2.2 Instructional manual of the farm tools and equipment are carefully read prior to operation 2.3 Pre-operation check-up 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 Safety procedures are followed.	<ul style="list-style-type: none"> • Types and operations of farm equipment • Standards operating procedures of farm equipment • Instructional manual of equipment • Pre-operation check-up • Equipment Specification • Procedures in calibrating and use of equipment • Equipment faults identification and reporting • Operation of equipment • Codes and Regulations on environmental protection 	<ul style="list-style-type: none"> • Identifying appropriate farm equipment for the work • Reading instructional manual. • Conducting pre-operation check-up • Identifying faults/defects of farm equipment • Reporting on defective farm equipment • Operating farm equipment • Following safety procedures.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		<ul style="list-style-type: none"> • Safety and keeping of equipment every after use • Safety measures 	
3. Perform preventive maintenance	<p>3.1 Tools and equipment are cleaned immediately after use in line with farm procedures</p> <p>3.2 Routine check-up and maintenance are performed</p> <p>3.3 Tools and equipment are stored in designated areas in line with farm procedures</p>	<ul style="list-style-type: none"> • Cleaning procedures of tools and equipment • Maintenance procedures of farm equipment • Storage of tools and equipment • Designated storage areas 	<ul style="list-style-type: none"> • Cleaning tools and equipment • Performing routinely check-up of tools and equipment • Maintaining farm equipment • Storing tools and equipment

RANGE OF VARIABLES

VARIABLE	RANGE
1. Farm equipment	1.1 Engine 1.2 Pumps 1.3 Generators 1.4 Sprayers
2. Farm tools	2.1 Sickle 2.2 Cutters 2.3 Weighing scales 2.4 Hand tools 2.5 Measuring tools 2.6 Garden tools
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

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Correctly identified appropriate farm tools and equipment 1.2 Operated farm equipment according to manual specification 1.3 Performed preventive maintenance
2. Method of Assessment	Competency in this unit must be assessed through: 2.1 Direct observation 2.2 Practical demonstration 2.3 Third Party Report
3. Resource Implications	3.1 Service/operational manual of farm tools and equipment 3.2 Tools and equipment 3.3 Farm implements
4. Context of Assessment	4.1 Assessment may occur in the workplace or in a simulated workplace or as part of a team under limited supervision

UNIT OF COMPETENCY : PERFORM ESTIMATION AND BASIC CALCULATION

UNIT CODE : AGR 321203

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	REQUIRED KNOWLEDGE	REQUIRED SKILLS
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	<ul style="list-style-type: none"> • Job requirements/labor needs • Calculation of quantities of materials and resources required • Calculation of time for job completion • Preparation of estimate report • Basic mathematical operations • Percentage and ratios • Unit Conversion 	<ul style="list-style-type: none"> • Identifying job requirements/labor • Estimating quantities of materials and resources required • Estimating time for job completion • Performing basic calculation • Compute percentage • Convert English to metric systems of measurement • Preparing estimate report
2. Perform basic workplace calculation	2.1 <i>System and units of measurement</i> to be followed are ascertained 2.2 Calculation needed to complete work tasks are performed using the <i>four basic mathematical operation</i> 2.3 Calculate whole fraction, percentage and mixed when are used to complete the instructions 2.4 Number computed is checked following work requirements	<ul style="list-style-type: none"> • Four basic mathematical operation • System and units of measurement • Fraction, percentage and ratio • Material takeoff • Materials costing 	<ul style="list-style-type: none"> • Compute bill of materials • Compute project cost

RANGE OF VARIABLES

VARIABLE	RANGE
1. Four basic mathematical operation	1.1 Addition 1.2 Subtraction 1.3 Multiplication 1.4 Division
2. System of measurement	2.1 English 2.2 Metric
3. Units of measurement	3.1 Area 3.2 Volume 3.3 Weight 3.4 Length

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. Method of Assessment	Competency in this unit must be assessed through: 2.1 Practical demonstration 2.2 Written examination
3. Resource Implications	3.1 Relevant tools and equipment for basic calculation 3.2 Recommended data
4. Context of Assessment	4.1 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: OPERATE BAMBOO NURSERY

UNIT CODE: AFF611310

UNIT DESCRIPTOR: This unit covers the knowledge, skills and attitude required to conduct pre-nursery operation, perform nursery operation, care and maintain nursery stocks and conduct post-nursery operations

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Conduct pre-nursery operation	<p>1.1 Site is selected based on established criteria.</p> <p>1.2 Nursery plan is followed according to prescribed procedures.</p> <p>1.3 Rooting facilities and nursery beds are prepared according to established farm procedures.</p> <p>1.4 Tools, equipment, supplies and materials are prepared according to work requirements.</p> <p>1.5 Site selected is secured from stray animals and unauthorized persons.</p> <p>1.6 Work output is reported to concerned authority according to industry practices.</p>	<ul style="list-style-type: none"> • Established criteria for site selection • Prescribed procedures in interpreting plan • Nursery plan components • Different tools, equipment, supplies and materials • Preparation of tools and equipment <ul style="list-style-type: none"> ○ Inspection and segregation of defective tools and equipment ○ Assembly and adjustment of equipment • Preparation of report 	<ul style="list-style-type: none"> • Selecting site for nursery operation • Interpreting nursery plan • Preparing rooting facilities and nursery beds • Preparing different tools, equipment, supplies and material • Securing selected site • Written and oral reporting
2. Perform nursery operation	<p>2.1 Culms as source of propagules are selected from the clump based on the established criteria</p> <p>2.2 Propagules of required bamboo species are collected and prepared based on prescribed criteria.</p> <p>2.3 Storage of propagules is done based on established farm practices.</p> <p>2.4 Rooting hormones are applied to propagules following prescribed dosages.</p>	<ul style="list-style-type: none"> • Rooting facilities and nursery beds • Procedures in the preparation of rooting facilities and nursery bed • Types and dosage preparation of rooting hormones • Computation for concentration of rooting hormones • Application procedures of rooting hormones • Different containers and potting media 	<ul style="list-style-type: none"> • Selecting culms as source of propagules • Collecting and preparing propagules • Storing of propagules • Computing for rooting hormones concentration • Applying rooting hormones to propagules • Rooting of propagules

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	<p>2.5 Hormone treated propagules are rooted in pots and in rooting bed</p> <p>2.6 Propagules rooted in bed are potted in containers using recommended potting media and placed in shaded nursery bed</p> <p>2.7 Nursery area is maintained as clean and safe following workplace procedures.</p> <p>2.8 Safety measures are practiced according to Occupational Safety and Health Standard</p>	<ul style="list-style-type: none"> • Potting procedures • Maintenance of clean and safe area <ul style="list-style-type: none"> ○ Unwanted vegetation ○ Waste disposal ○ Environmental regulations • OSHS • Source of propagules • Different types of soil and hull • Physical and chemical components of potting media; nutrient requirements 	<ul style="list-style-type: none"> • Potting of rooted propagules • Mixing of potting media • Maintaining clean and safe nursery area • Practicing OSHS • Selecting source of propagules
3. Maintain nursery stocks	<p>3.1 Watering of nursery stocks is done according to species requirement</p> <p>3.2 Weeding is done according to cultural procedures</p> <p>3.3 Pests and diseases are prevented and controlled using industry standard</p> <p>3.4 Fertilizers are applied based on soil nutrient status and plant's nutritional requirements</p> <p>3.5 Hardening of nursery stocks is undertaken according to prescribed procedures</p> <p>3.6 Safety measures are practiced according to industry procedures.</p>	<ul style="list-style-type: none"> • Moisture requirement of species • Watering procedures • Shading procedures • Weed species • Weeding procedures • Different pest and diseases • Prevention and control procedures • Types and specifications of fertilizers • Fertilizer application procedures • Hardening procedures • OSHS 	<ul style="list-style-type: none"> • Watering of nursery stocks • Weeding nursery area • Monitoring, preventing and controlling pests and diseases • Applying fertilizers • Hardening nursery stocks • Practicing OSHS
4. Conduct post nursery operations	<p>4.1 Planting stocks are graded according to standards</p> <p>4.2 Quality planting materials are packaged, dispatched and sold according to marketing procedures</p> <p>4.3 Sub-standard planting stocks are improved</p>	<ul style="list-style-type: none"> • Grading standards for planting stocks • Different packaging materials • Packaging and dispatching procedures • Marketing procedures 	<ul style="list-style-type: none"> • Grading of planting stocks • Packaging and dispatching nursery stocks • Selling quality planting materials • Marketing skills

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	<p>following farm procedures</p> <p>4.4 Maintenance of safe and clean area is undertaken throughout the completion of nursery operations following environmental regulations</p> <p>4.5 Tools and equipment are maintained and stored according to manufacturer's manual</p> <p>4.6 Excess supplies and materials are inventoried and stored based on standard procedure</p> <p>4.7 Work activities and outputs are recorded and reported to concerned authority</p>	<ul style="list-style-type: none"> • Procedures in maintaining nursery area • Maintenance and storage procedure of tools and equipment • Inventory and storage of excess supplies and materials procedures • Record keeping and reporting • 	<ul style="list-style-type: none"> • Improving sub-standard planting stocks • Maintaining nursery area • Maintaining and storing tools and equipment • Conducting inventory and storing of excess supplies and materials • Oral and written reporting

RANGE OF VARIABLES

VARIABLE	RANGE
1. Established criteria	Established criteria includes: 1.1 Water source 1.2 Accessibility and visibility to buyers 1.3 Labour/Propagator 1.4 Topography 1.5 Distance to the proposed plantation/ demonstration farm 1.6 Demand of planting materials 1.7 Security, Peace and order 1.8 Source of potting media 1.9 Light conditions 1.10 Vegetation 1.11 Source of propagules
2. Equipment, tools, supplies and materials	Equipment, tools, supplies and materials may include: 2.1 Equipment 2.1.1 Grass Cutter 2.2 Tools 2.2.1 Pruning Shears 2.2.2 Pruning Saw 2.2.3 Lopping Shears 2.2.4 Shovel 2.2.5 Pick Mattock or Grab Hoe 2.2.6 Digging Bar 2.2.7 Wheel Barrow 2.2.8 Hack Saw 2.2.9 Sickle 2.2.10 Bolo 2.2.11 Animal 2.2.12 Animal Sled 2.3 Supplies and Materials 2.3.1 PPE 2.3.2 Office materials 2.3.3 Poly bags 2.3.4 Pesticide 2.3.5 Fertilizers 2.3.6 Fuel 2.3.7 Lubricants
3. Storage of propagules	Storage of propagules may include: 3.1 Heeling – in

	3.2 Soaking
4 Propagules	Propagules may include: 4.1 Culm cutting 4.2 Branch cutting
5 Prescribed criteria	Prescribed criteria may include: 5.1 Age of culms 5.2 Portion of culms 5.3 Size of propagules 5.4 Season of collection 5.5 Presence of plump buds
6 Potting media	Potting media includes ordinary garden soil mixed with any of the following: 6.1 Rice hull 6.2 Saw dust 6.3 Compost 6.4 coco coir 6.5 sand
7 Safety measures	Safety measures may include: 7.1 Wearing appropriate personal protective equipment 7.2 Handling tools 7.3 Following instructions of manuals in equipment operation 7.4 Awareness and control of various hazards of the operations
8 Pests and diseases	Pests and diseases may include: 8.1 Pests 8.1.1 Mealy bugs 8.1.2 Mites 8.1.3 Aphids 8.2 Diseases 8.2.1 Leaf rust 8.2.2 Leaf spot 8.2.3 Tip blight
9 Fertilizers	Fertilizers may include: 9.1. Organic Fertilizer 9.2. Inorganic Fertilizer
10 Grading standards	Grading standards may include: 10.1 Health 10.2 Clump size (number of shoots) of stocks 10.3 Presence of sprouts 10.4 Developed root system
11 Improvement of sub-standard planting stocks	Improvement of quality of sub-standard planting stocks may include but not limited to: 11.1 Fertilizer application (Organic or inorganic) 11.2 Watering 11.3 Weeding

	11.4 Control of pests and diseases 11.5 Hardening-off
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EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1 Conducted pre-nursery operation 1.2 Perform nursery operation 1.3 Maintained nursery stocks 1.4 Conducted post nursery operations
2. Resource Implications	The following resources should be provided: 2.1 Nursery site or simulated workplace 2.2 Equipment, tools, materials and supplies for nursery operation 2.3 Protective Personal Equipment
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Interview 3.2 Demonstration with questioning 3.3 Written examination
4. Context for Assessment	4.1 Competency may be assessed in the work place or in a simulated work place setting

UNIT OF COMPETENCY : ESTABLISH BAMBOO FARM

UNIT CODE :AFF611311

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitude required to conduct pre-establishment activities, plant bamboo stocks, maintain bamboo farm and conduct post-establishment operation.

ELEMENT	PERFORMANCE CRITERIA	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	<i>Italicized term are elaborated in the Range of Variables</i>		
1. Conduct pre-establishment activities	1.1 Species-site matching is carried out following established procedures 1.2 Plantation plan is followed according to prescribed procedures 1.3 Equipment, tools, supplies and materials are prepared according to work requirements 1.4 Boundaries are laid-out and marked through reference points 1.5 Site is prepared in accordance with established farm practices	<ul style="list-style-type: none"> • Site characterization • Criteria for site selection <ul style="list-style-type: none"> ○ physiography ○ climate ○ soil ○ existing biotic vegetation ○ water source/ supply • Species selection • Procedures in site selection • Species-site matching • Procedures of species-site matching • Prescribed procedures in interpreting plan • Plantation plan components • Different types and uses of tools, equipment, supplies and materials • Preparation of tools • Procedures in marking boundaries • Laying out and staking procedures • Planting system • Digging procedure • Farm practices for bamboo production site preparation 	<ul style="list-style-type: none"> • Performing species-site matching • Performing site characterization for plantation operation • Interpreting plantation plan • Obtaining local weather information • Preparing different tools, equipment, supplies and material • Marking the boundary • Laying out and staking required number of propagules of planting area • Preparing site • Digging of planting holes

<p>2. Plant bamboo stocks</p>	<p>2.1 Planting is carried out according to prescribed farm practices</p> <p>2.2 Early tending operations are performed based on cultural practices</p> <p>2.3 Safety measures are practiced following OSHS</p>	<ul style="list-style-type: none"> • Bamboo planting procedures and standards • Early tending operations • Cultural Practices • OSHS 	<ul style="list-style-type: none"> • Planting bamboo • Applying early tending operations • Practicing OSHS i.e. PPE
<p>3. Maintain and protect bamboo farm</p>	<p>3.1 Schedule of maintenance and protection activities is followed according to work requirement</p> <p>3.2 Maintenance activities are performed according to established farm practices</p> <p>3.3 Monitoring checklist is accomplished based on instructions of immediate supervisor</p> <p>3.4 Remedial action is performed based on the instructions of immediate supervisor</p> <p>3.5 Safety measures are applied following OSHS</p>	<ul style="list-style-type: none"> • Schedule of maintenance activity • Maintenance activities • Monitoring checklist • Remedial actions • Safety measures in bamboo maintenance and protection farm • OSHS 	<ul style="list-style-type: none"> • Following schedule of maintenance activities • Maintaining plantation • Accomplishing checklist • Performing remedial action • Practicing OSHS
<p>4. Conduct post establishment operation</p>	<p>4.1 Maintenance of safe working area is undertaken throughout the completion of plantation operations following environmental regulations</p> <p>4.2 Tools and equipment are maintained and stored according to manufacturer's manual</p> <p>4.3 Excess supplies and materials are inventoried and stored based on standard procedures</p> <p>4.4 Work activities and outputs are recorded</p>	<ul style="list-style-type: none"> • Procedures in maintaining a safe plantation area • Environmental regulations • Proper tools and equipment to be used • Maintenance and storage procedure of tools and equipment • Inventory and storage of excess supplies and materials • Record keeping and preparation of report 	<ul style="list-style-type: none"> • Maintaining safe and clean area • Maintaining and storing tools and equipment • Inventorying and storing excess supplies and materials • Keeping records • Preparing reports • Written and oral reporting

	and reported to immediate supervisor		
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RANGE OF VARIABLES

VARIABLE	RANGE
1. Equipment, tools, supplies and materials	Equipment, tools, supplies and materials may include: 1.1 Equipment 1.1.1 Mini-chain saw 1.2 Tools 1.2.1 Shovel 1.2.2 Digging bar 1.2.3 Wheel barrow 1.2.4 Post hole digger 1.2.5 Sickle 1.2.6 Bolo 1.3 Supplies and materials 1.3.1 PPE 1.3.2 Office materials 1.3.3 Insecticide 1.3.4 Fertilizers 1.3.5 Fuel 1.3.6 Lubricants 1.3.7 Stakes
2. Site preparation	Site preparation may include: 2.1 Lay- outing of planting plan 2.2 Staking 2.3 Clearing
3. Early tending operations	Early tending operations may include: 3.1 Initial fertilizer application 3.2 Mulching 3.3 weeding 3.4 replacement of dead planting materials
4. Maintenance and protection activities	Maintenance and protection activities may include: 4.1 Removal of dead plants and replanting 4.2 Weeding 4.3 Soil cultivation and mounding 4.4 Fertilizer application

	4.5 Pruning of thickets 4.6 Thinning of unhealthy culms 4.7 protection from astray animals , fire, pest and diseases
5. Record	Record includes: 5.1 Work activities 5.2 Work outputs

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1 Conduct pre-establishment activities 1.2 Plant bamboo stocks 1.3 Maintain bamboo farm 1.4 Conduct post-establishment operation
2. Resource Implications	The following resources should be provided: 2.1 Bamboo farm/plantation site or simulated workplace 2.2 Equipment, tools, materials and supplies for bamboo farm establishment operation 2.3 Protective Personal Equipment
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Demonstration with questioning 3.2 Written examination
4. Context for Assessment	4.1 Competency may be assessed in the work place or in a simulated work place setting

UNIT OF COMPETENCY : CONDUCT BAMBOO CLUMP REHABILITATION

UNIT CODE :AFF611312

UNIT DESCRIPTOR : This unit covers the knowledge and skill required to conduct clump pre- rehabilitation activities, perform clump rehabilitation operation and perform clump post- rehabilitation

ELEMENT	PERFORMANCE CRITERIA <i>Italicized term are elaborated in the Range of Variables</i>	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Conduct pre-clump rehabilitation activities	1.1 Clump conditions are assessed based on established criteria 1.2 Rehabilitation plan is followed according to cultural practices 1.3 Equipment, Tools, supplies and materials are prepared according to work requirements 1.4 Safety measures are applied according to OSHS	<ul style="list-style-type: none"> • Different clump conditions • Assessment procedures • Established criteria • Cultural practices • Bamboo clump rehabilitation plan • Defective culms <ul style="list-style-type: none"> ○ broken ○ dead and dying ○ crooked ○ stunted ○ diseased • Proper tools and equipment to be used • Equipment, tools, supplies and materials • OSHS 	<ul style="list-style-type: none"> • Assessing clump conditions • Interpreting and following rehabilitation plan • Preparing tools, supplies and materials • Observing safety measures
2. Perform clump rehabilitation activities	2.1 Clump rehabilitation procedures are applied according to farm practice 2.2 Maintain the rehabilitated clumps based on standard cultural practices 2.3 Monitoring culm age is performed based on established farm practices 2.3 Safety measures are applied according to OSHS	<ul style="list-style-type: none"> • Thickets and unnecessary branches • Cultural practices • Handling and operation of mini-chain saw • Safety practices in clump rehabilitation 	<ul style="list-style-type: none"> • Applying clump rehabilitation procedures • Pruning of thickets and unnecessary branches • Thinning of defective culms • Performing culm age monitoring • Handling and operating mini-chain saw • Practicing OSHS

	and industry procedures 2.4 Mini – chain saw is handled and operated following manufacturer’s manual		
3. Perform post-rehabilitation activities	3.1 Tools and equipment are maintained and stored according to manufacturer’s manual 3.2 Excess supplies and materials are inventoried and stored based on standard procedures 3.3 Wastes are managed following environmental regulations 3.4 Work activities and outputs are recorded and reported to immediate supervisor	<ul style="list-style-type: none"> • Proper tools and equipment to be used • Maintenance and storage procedure of tools and equipment • Inventory and storage of excess supplies and materials procedures • Waste management • 3Rs • Record keeping and preparation of report 	<ul style="list-style-type: none"> • Maintaining and storing tools and equipment • Inventorying and storing excess supplies and materials • Managing wastes • Keeping record • Preparing report • Written and oral reporting

RANGE OF VARIABLES

VARIABLE	RANGE
1. Established criteria	Established criteria may include: 1.1 Dense thickets around the clump 1.2 Presence of defective and dead culms and stumps 1.3 Difficult to penetrate during harvesting
2. Equipment, tools supplies and materials	Equipment, tools supplies and materials may include: 2.1 Equipment 2.1.1 Mini-chain saw 2.2 Tools 2.2.1 shovel 2.2.2 digging bar 2.2.3 wheel barrow 2.2.4 Pruning shears 2.2.5 sickle 2.2.6 bolo 2.2.7 Pruning saw 2.2.8 Lopping shears 2.3 Supplies and materials 2.3.1 PPE 2.3.2 Insecticide 2.3.3 fertilizers 2.3.4 fuel 2.3.5 lubricants
3. Rehabilitation procedures	Rehabilitation procedures may include but not limited to: 3.1 Pruning of thickets and unnecessary basal branches 3.2 Removal of defective culms 3.3 Cutting of over-matured culms 3.4 Soil cultivation and mounding 3.5 Application of fertilizer 3.6 Mulching
4. Standard cultural practices	Standard cultural practices may include but not limited to: 4.1 Weeding 4.2 Soil cultivation and mounding 4.3 Fertilizer application 4.4 Pruning of thickets 4.5 Thinning of unhealthy culms
5. Farm practices	Farming practices may include: 5.1 Visual 5.1.1 Color 5.1.2 presence of lichens

	5.2 Sound 5.2.1 dull 5.2.2 ringing
6. Mulch	Mulch may include: 3.1 Leaf litter 3.2 Rice hull 3.3 Coco coir 3.4 Cut grass 3.5 Saw dust

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1 Conducted clump pre- rehabilitation activities 1.2 Performed clump rehabilitation operation 1.3 Performed clump post- rehabilitation
2. Resource Implications	The following resources should be provided: 2.1 Bamboo clump rehabilitation site or simulated workplace 2.2 Equipment, tools, materials and supplies for bamboo clump rehabilitation operation 2.3 Protective Personal Equipment
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Interview 3.2 Demonstration with questioning 3.3 Written examination
4. Context for Assessment	4.1 Competency may be assessed in the work

	place or in a simulated work place setting
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UNIT OF COMPETENCY : CONDUCT HARVESTING AND POST-HARVESTING OPERATION

UNIT CODE : AFF611313

UNIT DESCRIPTION : This unit covers the knowledge and skill required to undertake pre-harvesting operations, perform harvesting operations and carry-out post harvesting activities for poles and shoots.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized term are elaborated in the Range of Variables</i>	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1.Undertake pre-harvesting activities	1.1 Market transactions are performed following common business practices and market demand 1.2 Harvestable culms are selected based on maturity indicators 1.3 Harvesting equipment, tools, supplies and materials are prepared based on work requirement 1.4 Harvesting plan is prepared based on farm records	<ul style="list-style-type: none"> • Market transactions • Market demand • Computation of culm sizes using metric system • Harvestable culms • Maturity indicators • Equipment, tools, supplies and materials for harvesting • Harvesting plan and farm records 	<ul style="list-style-type: none"> • Negotiation skills • Performing market transactions • Computing culm sizes • Selecting harvestable culms • Preparing equipment, tools, supplies and materials • Preparing harvesting plan
2.Perform harvesting operations	2.1 Harvestable culms and shoots are cut using standard harvesting procedures 2.2 Safety measures are observed according to OSHS 2.3 Harvested culms are prepared based on farm practices	<ul style="list-style-type: none"> • Harvesting techniques • Standard harvesting procedures • Proper tools and equipment to be used • Proper handling of equipment and tools • Characteristics of harvestable culms and shoots • Harvesting period: <ul style="list-style-type: none"> ○ dry season for culms 	<ul style="list-style-type: none"> • Performing harvesting operations • Handling equipment and tools • Preparing harvested culms

		<ul style="list-style-type: none"> ○ toward the end of wet season for shoots ○ Preparation of harvested culms ● OSHS 	
3. Carry-out post harvesting activities	<p>3.1 Harvested culms are cut into desired sizes and quality based on market requirements</p> <p>3.2 Prophylactic treatment is applied to prevent discoloration and other defects based on buyer's specification</p> <p>3.3 Safety measures are observed according to OSHS</p> <p>3.4 Harvested culms and shoots are handled following farm practices</p> <p>3.5 Poles are dried according to product requirement.</p> <p>3.6 Market transactions are completed based on contract</p>	<ul style="list-style-type: none"> ● Cutting techniques ● Product requirements ● Prophylactic treatment ● Procedure and proper application of prophylactic treatment ● OSHS ● Handling procedures for harvested culms and shoots ● Drying of poles ● Basic computation ● Marketing Contract ● Cost of production 	<ul style="list-style-type: none"> ● Cutting harvested culms into desired sizes and quality ● Applying prophylactic treatment ● Observing safety Measures ● Computation Skills ● Completing marketing transactions ● Communication skills ● Handling harvested culms and shoots ● Computation of production cost

RANGE OF VARIABLES

VARIABLE	RANGE
1. Market demand	Market demand may include: 1.1 species 1.2. culm age 1.3 thickness of culm wall 1.3. size (diameter and length) 1.4 shoots
2. Harvesting equipment, tools, supplies and materials	Harvesting equipment, tools, supplies and materials may include: 2.1 Equipment 2.1.1 Mini-chain saw 2.2 Tools 2.2.1 Pruning saw 2.2.2 Pruning shears 2.2.3 Lopping shears 2.2.4 Bolo 2.3 Supplies and materials 2.3.1 PPE 2.3.2 lubricants 2.3.3 fuel 2.3.4 rope
3. Standard harvesting procedures	Standard harvesting procedures includes: 3.1 Manual Harvesting 3.2 Mechanical harvesting
4. Harvestable culms and shoots	Harvestable culms and shoots may include but not limited to: 4.1 Culms 4.1.1 Pale green to yellowish culm 4.1.2 Absence of culm sheath 4.1.3. Merchantable size 4.2 Shoots 4.2.1 Age 4.2.2 Size 4.2.3Species
5. Preparation of harvested culms	Preparation of harvested culms may include: 5.1Letting the cut culm stand for 2 days to drain sap 5.2Removal of branch 5.3Removal of tops
6. Prophylactic treatment	Prophylactic treatment includes: 6.1 Spraying 6.2 Dipping 6.3 Soaking 6.4 Sap replacement
7. Drying of poles	Drying of poles include: 7.1 air and sun- drying 7.2 kiln drying

EVIDENCE GUIDE

1. Critical aspects of Competency	<p>Assessment evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Undertook pre-harvesting operations 1.2 Performed harvesting operations 1.3 Carried-out post harvesting activities
2. Resource Implications	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Bamboo harvesting and post-harvesting sites or simulated workplaces 2.2 Equipment, tools, materials and supplies for harvesting and post-harvesting operations. 2.3 Protective Personal Equipment
3. Methods of Assessment	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Demonstration with questioning 3.2 Written examination
4. Context for Assessment	<ul style="list-style-type: none"> 4.1 Competency may be assessed in the work place or in a simulated work place setting

SECTION 3 TRAINING ARRANGEMENTS

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 **BAMBOO PRODUCTION NC II**

They include information on curriculum design; training delivery; trainee entry requirements; tools, materials and equipment; training facilities; and trainer's qualification.

3.1 CURRICULUM DESIGN

TESDA shall provide the training on the development of competency-based curricula to enable training providers develop their own curricula with the components mentioned below.

Delivery of knowledge requirements for the basic, common and core units of competency specifically in the areas of mathematics, science/technology, communication/language and other academic subjects shall be contextualized. To this end, TVET providers shall develop a Contextual Learning Matrix (CLM) to accompany their curricula.

Course Title: **BAMBOO PRODUCTION**

NC Level: **NC II**

Nominal Training Duration:	20 Hours	Basic Competencies
	65 Hours	Common Competencies
	<u>110</u> Hours	Core Competencies
Total:	195 Hours	

Course Description:

This course is designed to provide the learner with knowledge, skills and attitude on Bamboo Production NC II in accordance with industry standards. This covers competencies that a person must achieve in operating bamboo nursery, establishing bamboo farm, conducting bamboo clump rehabilitation and conducting harvesting and post-harvesting operations.

To obtain this, all units prescribed for this qualification must be achieved.

**BASIC COMPETENCIES
(20 Hrs.)**

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
1. Participate in workplace communication	1.1 Obtain and convey workplace information	<ul style="list-style-type: none"> Describe Organizational policies 	<ul style="list-style-type: none"> Group discussion 	<ul style="list-style-type: none"> Oral evaluation 	<ul style="list-style-type: none"> 4 Hours
		<ul style="list-style-type: none"> Read: <ul style="list-style-type: none"> Effective communication 	Lecture	<ul style="list-style-type: none"> Written examination 	
		<ul style="list-style-type: none"> Written communication 			
		<ul style="list-style-type: none"> Communication procedures and systems 			
		<ul style="list-style-type: none"> Identify: <ul style="list-style-type: none"> Different modes of communication 			
		<ul style="list-style-type: none"> Medium of communication 			
		<ul style="list-style-type: none"> Flow of communication 			
		<ul style="list-style-type: none"> Available technology relevant to the enterprise and the individual's work responsibilities 			
		<ul style="list-style-type: none"> Prepare different Types of question 	<ul style="list-style-type: none"> Demonstration 	<ul style="list-style-type: none"> Observation 	
		<ul style="list-style-type: none"> Gather different sources of information 			
		<ul style="list-style-type: none"> Apply storage system in establishing workplace information 			

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		<ul style="list-style-type: none"> Demonstrate Telephone courtesy 			
	1.2 Complete relevant work related documents	<ul style="list-style-type: none"> Describe Communication procedures and systems 	<ul style="list-style-type: none"> Group discussion 	<ul style="list-style-type: none"> Oral evaluation 	
		<ul style="list-style-type: none"> Read: <ul style="list-style-type: none"> Meeting protocols Nature of workplace meetings 	<ul style="list-style-type: none"> Lecture 	<ul style="list-style-type: none"> Written examination 	
		<ul style="list-style-type: none"> Workplace interactions 	<ul style="list-style-type: none"> Lecture 	<ul style="list-style-type: none"> Written examination 	
		<ul style="list-style-type: none"> Barriers of communication 			
		<ul style="list-style-type: none"> Complete work related documents 	<ul style="list-style-type: none"> Demonstration 	<ul style="list-style-type: none"> Observation 	
		<ul style="list-style-type: none"> Read instructions on work related forms/documents 	<ul style="list-style-type: none"> Lecture 	<ul style="list-style-type: none"> Written examination 	
		<ul style="list-style-type: none"> Practice: <ul style="list-style-type: none"> Estimate, calculate and record routine workplace measures Basic mathematical processes of addition, subtraction, division and multiplication 	<ul style="list-style-type: none"> Demonstration 	<ul style="list-style-type: none"> Observation 	
		<ul style="list-style-type: none"> Demonstrate office activities in: <ul style="list-style-type: none"> workplace meetings and discussions scenario 			<ul style="list-style-type: none"> Role play

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		<ul style="list-style-type: none"> Perform workplace duties scenario following simple written notices 	<ul style="list-style-type: none"> Role play 	<ul style="list-style-type: none"> Oral evaluation Observation 	
		<ul style="list-style-type: none"> Follow simple spoken language 	<ul style="list-style-type: none"> Demonstration 	<ul style="list-style-type: none"> Observation 	
		<ul style="list-style-type: none"> Identify the different Non-verbal communication 	<ul style="list-style-type: none"> Lecture 	<ul style="list-style-type: none"> Written examination 	
		<ul style="list-style-type: none"> Demonstrate ability to relate to people of social range in the workplace 	<ul style="list-style-type: none"> Demonstration 	<ul style="list-style-type: none"> Observation 	
		<ul style="list-style-type: none"> Gather and provide information in response to workplace requirements 			
	1.3 Participate in workplace meeting and discussion	<ul style="list-style-type: none"> Identify: <ul style="list-style-type: none"> types of workplace documents and forms 	<ul style="list-style-type: none"> Lecture 	<ul style="list-style-type: none"> Written examination 	
		<ul style="list-style-type: none"> kinds of workplace report 			
		<ul style="list-style-type: none"> Available technology relevant to the enterprise and the individual's work responsibilities 			
		<ul style="list-style-type: none"> Read and follow instructions in applying basic mathematical concepts 			
		<ul style="list-style-type: none"> Follow simple spoken language 	<ul style="list-style-type: none"> Demonstration 	<ul style="list-style-type: none"> Observation 	
		<ul style="list-style-type: none"> Demonstrate ability to relate to people of social range in the workplace 	<ul style="list-style-type: none"> Demonstration 	<ul style="list-style-type: none"> Observation 	
		<ul style="list-style-type: none"> Gather and provide information in response to workplace requirements 			

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
2. Work in a team environment	2.1 Describe and identify team role and responsibility in a team.	<ul style="list-style-type: none"> • Describe the team role and scope 	<ul style="list-style-type: none"> • Group discussion 	<ul style="list-style-type: none"> • Oral evaluation 	4 Hours
		<ul style="list-style-type: none"> • Read <ul style="list-style-type: none"> ○ Definition of Team 	<ul style="list-style-type: none"> • Lecture 	<ul style="list-style-type: none"> • Written examination 	
		<ul style="list-style-type: none"> ○ Difference between team and group 			
		<ul style="list-style-type: none"> ○ Objectives and goals of team 			
		<ul style="list-style-type: none"> • Identify different sources of information 			
	2.2 Describe work as a team	<ul style="list-style-type: none"> • Describe team goals and objectives 	<ul style="list-style-type: none"> • Group discussion 	<ul style="list-style-type: none"> • Oral evaluation 	
		<ul style="list-style-type: none"> • Perform in setting team goals and expectations scenario 	<ul style="list-style-type: none"> • Role play 	<ul style="list-style-type: none"> • Oral evaluation • Observation 	
		<ul style="list-style-type: none"> • Identify <ul style="list-style-type: none"> ○ individual role and responsibility 	<ul style="list-style-type: none"> • Lecture 	<ul style="list-style-type: none"> • Written examination 	
		<ul style="list-style-type: none"> • Practice Interacting effectively with others 	<ul style="list-style-type: none"> • Group discussion 	<ul style="list-style-type: none"> • Oral evaluation 	
		<ul style="list-style-type: none"> • Read: <ul style="list-style-type: none"> ○ Fundamental rights at work including gender sensitivity 	<ul style="list-style-type: none"> • Lecture 	<ul style="list-style-type: none"> • Written examination 	
	<ul style="list-style-type: none"> • <ul style="list-style-type: none"> ○ Understanding individual competencies relative to teamwork 				

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
	•	○ Types of individuals			
	•	○ Role of leaders			
3. Practice career professionalism	3.1 Integrate personal objectives with organizational goals	• Describe performance evaluation	• Group discussion	• Oral evaluation	6 Hours
		• Read:			
		○ Work values and ethics (Code of Conduct, Code of Ethics, etc.)	• Lecture	• Written examination	
		○ Understanding personal objectives			
		○ Understanding organizational goals			
		• Demonstrate Intra and Interpersonal skills at work			
		• Demonstrate personal commitment in work	• Demonstration	• Observation	
	3.2 Set and meet work priorities	• Describe company policies, operations, procedures and standards	• Group discussion	• Oral evaluation	
		• Read:			
		○ Time Management	• Lecture	• Written examination	

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		<ul style="list-style-type: none"> ○ Basic strategic planning concepts 			
		<ul style="list-style-type: none"> ○ Resource utilization and management 			
		<ul style="list-style-type: none"> • Apply managing goals and time 	<ul style="list-style-type: none"> • Demonstration 	<ul style="list-style-type: none"> • Observation 	
		<ul style="list-style-type: none"> • Practice: <ul style="list-style-type: none"> ○ economic use of resources and facilities 	<ul style="list-style-type: none"> • Demonstration 	<ul style="list-style-type: none"> • Observation 	
		<ul style="list-style-type: none"> ○ time management 			
	3.3 Maintain professional growth and development	<ul style="list-style-type: none"> • Describe company recognition and incentives 	<ul style="list-style-type: none"> • Group discussion 	<ul style="list-style-type: none"> • Oral evaluation 	
		<ul style="list-style-type: none"> • Read: <ul style="list-style-type: none"> ○ Career development opportunities 			
		<ul style="list-style-type: none"> ○ Information on relevant licenses and or certifications 	<ul style="list-style-type: none"> • Lecture 	<ul style="list-style-type: none"> • Written examination 	
		<ul style="list-style-type: none"> ○ personal career development needs 			
		<ul style="list-style-type: none"> • Identify career opportunities 			
		<ul style="list-style-type: none"> • Determine personal career development needs 	<ul style="list-style-type: none"> • Group discussion 	<ul style="list-style-type: none"> • Oral evaluation 	

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
4. Practice occupational health and safety	4.1 Identify hazard and risks	<ul style="list-style-type: none"> • Describe OHS procedures, practices and regulations 	<ul style="list-style-type: none"> • Group discussion 	<ul style="list-style-type: none"> • Oral evaluation 	6 Hours
		<ul style="list-style-type: none"> • Read 			
		<ul style="list-style-type: none"> ○ OHS indicators 			
		<ul style="list-style-type: none"> ○ Organizational contingency practices 	<ul style="list-style-type: none"> • Lecture 	<ul style="list-style-type: none"> • Written examination 	
		<ul style="list-style-type: none"> • Practice hazards/risks identification and control 			
	4.2 Evaluate hazard and risks	<ul style="list-style-type: none"> • Describe effects of safety hazards 	<ul style="list-style-type: none"> • Group discussion 	<ul style="list-style-type: none"> • Oral evaluation 	
		<ul style="list-style-type: none"> • Read 			
		<ul style="list-style-type: none"> ○ Threshold Limit Value –TLV 	<ul style="list-style-type: none"> • Lecture 	<ul style="list-style-type: none"> • Written examination 	
		<ul style="list-style-type: none"> • Practice reporting safety hazards 	<ul style="list-style-type: none"> • Role play 	<ul style="list-style-type: none"> • Observation 	
		<ul style="list-style-type: none"> • Demonstrate evaluating hazards and risks using communication equipment 	<ul style="list-style-type: none"> • Demonstration 	<ul style="list-style-type: none"> • Observation 	
	4.3 Control hazards and risks	<ul style="list-style-type: none"> • Describe : <ul style="list-style-type: none"> ○ Organization safety and health protocol 	<ul style="list-style-type: none"> • Group discussion 	<ul style="list-style-type: none"> • Oral evaluation 	
		<ul style="list-style-type: none"> ○ Company emergency procedure practices 			

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		<ul style="list-style-type: none"> • Practice personal hygiene 	<ul style="list-style-type: none"> • Demonstration 	<ul style="list-style-type: none"> • Observation 	
		<ul style="list-style-type: none"> • Practice drills on responding to emergency 	<ul style="list-style-type: none"> • Demonstration • Simulation 	<ul style="list-style-type: none"> • Observation 	
	4.4 Maintain occupational health and safety awareness	<ul style="list-style-type: none"> • Identify emergency-related drills information 	<ul style="list-style-type: none"> • Lecture 	<ul style="list-style-type: none"> • Written examination 	
		<ul style="list-style-type: none"> • Practice occupational safety and health standards on personal records in the workplace 	<ul style="list-style-type: none"> • Role play 	<ul style="list-style-type: none"> • Observation 	
		<ul style="list-style-type: none"> • Practice emergency related drills in the workplace 	<ul style="list-style-type: none"> • Demonstration • Simulation 	<ul style="list-style-type: none"> • Observation 	

**COMMON COMPETENCIES
(65 Hrs.)**

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
1. Apply safety measures in farm operations	1.1 Determine areas of concern for safety measures	<ul style="list-style-type: none"> Identify work tasks in farm operations 	<ul style="list-style-type: none"> Lecture Discussion Incomplete worksheet Power point presentation Video presentation 	<ul style="list-style-type: none"> Written examination Interview Oral questioning Demonstration 	(Total-7 hrs) 1 hr
		<ul style="list-style-type: none"> Discuss safety measures in a workplace during farm operations 	<ul style="list-style-type: none"> Lecture Discussion Incomplete worksheet Power point presentation Video presentation Role playing 	<ul style="list-style-type: none"> Written examination Interview Oral questioning Demonstration 	1 hr
		<ul style="list-style-type: none"> Explain farm operations situations and period when to observe safety 	<ul style="list-style-type: none"> Lecture Discussion Incomplete worksheet Power point presentation Video presentation Role playing 	<ul style="list-style-type: none"> Written examination Interview Oral questioning Demonstration 	1 hr

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		<ul style="list-style-type: none"> • Identify appropriate tools, materials and outfits to be used 	<ul style="list-style-type: none"> • Lecture • Discussion • Incomplete worksheet • Power point presentation • Video presentation 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	2 hrs
		<ul style="list-style-type: none"> • Prepare tools, materials and outfits for the farm operation 	<ul style="list-style-type: none"> • Lecture • Discussion • Power point presentation • Video presentation • Demonstration 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	2 hrs
	1.2Apply appropriate safety measures	<ul style="list-style-type: none"> • Enumerate uses and functions of tools and materials 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Demonstration 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	(Total -11 hrs.) 1 hr
		<ul style="list-style-type: none"> • Explain procedures of wearing personal protective equipment 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning 	1 hr

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		<ul style="list-style-type: none"> • Discuss topics on effectivity, shelf life and expirations of materials to be used. 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning 	1 hr
		<ul style="list-style-type: none"> • Identify the emergency procedures 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet • 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning 	2 hrs
		<ul style="list-style-type: none"> • Identify hazards in a farm workplace 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning 	2 hrs
		<ul style="list-style-type: none"> • Use tools and materials 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	2 hrs

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		<ul style="list-style-type: none"> • Wear personal protective equipment 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	0.5 hr
		<ul style="list-style-type: none"> • Prepare report on hazards in the workplace 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	1 hr
		<ul style="list-style-type: none"> • Report on hazards in the workplace 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet • Role playing 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	0.5 hr
	1.3 Safekeep/dispose of tools, materials and outfit	<ul style="list-style-type: none"> • Explain cleaning and storing procedures of the used tools and outfit 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning 	(Total – 6 hrs) 1 hr

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		<ul style="list-style-type: none"> • State labelling and storing procedures for unused materials 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning 	1 hr
		<ul style="list-style-type: none"> • Explain proper wastes disposal 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning 	1 hr
		<ul style="list-style-type: none"> • Clean and store used tools and outfit 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	1 hr
		<ul style="list-style-type: none"> • Label and store unused materials 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	1 hr

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		<ul style="list-style-type: none"> • Dispose waste materials 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	1 hr
2.Use farm tools and equipment	2.1Select and use farm tools	<ul style="list-style-type: none"> • Identify farm tools 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	(Total -6 hrs) 1 hr
		<ul style="list-style-type: none"> • Describe faults and defective tools 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	1 hr
		<ul style="list-style-type: none"> • Discuss using of tools and equipment relating to manufacturer's manual 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	1 hr

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		<ul style="list-style-type: none"> • Check farm tools for faults and defects 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	1 hr
		<ul style="list-style-type: none"> • Use tools and equipment relating to manufacturer's manual 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	2 hrs
	2.2 Select and operate farm equipment	<ul style="list-style-type: none"> • Identify farm equipment 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning 	(Total -19 hrs) 1 hr
		<ul style="list-style-type: none"> • Explain importance of reading manufacturer's manual 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning 	1 hr

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		<ul style="list-style-type: none"> • Discuss pre-operation check and its importance 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning 	1 hr
		<ul style="list-style-type: none"> • Identify different types of faults in farm equipment 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning 	1 hr
		<ul style="list-style-type: none"> • Enumerate reporting procedures 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet • Role playing 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	1 hr
		<ul style="list-style-type: none"> • Enumerate procedures in using farm equipment 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning 	1 hr
		<ul style="list-style-type: none"> • Discuss safety procedures for farm operation 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning 	1 hr

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		<ul style="list-style-type: none"> • Read manufacturer's manual 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	1 hr
		<ul style="list-style-type: none"> • Conduct pre-operation check-up 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	1 hr
		<ul style="list-style-type: none"> • Report identified faults 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	1 hr
		<ul style="list-style-type: none"> • Operate farm equipment 	<ul style="list-style-type: none"> • Discussion • Power point presentation • Video presentation • Incomplete worksheet • Demonstration • Hands-on • Field visit 	<ul style="list-style-type: none"> • Written examination • Interview • Oral questioning • Demonstration 	8 hrs

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		<ul style="list-style-type: none"> Follow safety procedures 	<ul style="list-style-type: none"> Discussion Power point presentation Video presentation Incomplete worksheet Demonstration Hands-on 	<ul style="list-style-type: none"> Written examination Interview Oral questioning Demonstration 	1 hr
3.Perform estimation and basic calculation	3.1Perform estimation	<ul style="list-style-type: none"> Identify job requirements and work task/activity 	<ul style="list-style-type: none"> Lecture Discussion 	<ul style="list-style-type: none"> Written exam Oral questioning 	(Total -8 hrs) 1 hr
		<ul style="list-style-type: none"> Identify materials and resources of job requirements 	<ul style="list-style-type: none"> Lecture Discussion 	<ul style="list-style-type: none"> Written exam Oral questioning 	1 hr
		<ul style="list-style-type: none"> Estimate time to complete work task/activity 	<ul style="list-style-type: none"> Lecture Discussion Demonstration Video presentation 	<ul style="list-style-type: none"> Written exam Oral questioning 	2 hrs
		<ul style="list-style-type: none"> Estimate quantities of materials and resources 	<ul style="list-style-type: none"> Lecture Discussion Demonstration 	<ul style="list-style-type: none"> Written exam Oral questioning 	2 hrs
		<ul style="list-style-type: none"> Prepare and submit bill of materials 	<ul style="list-style-type: none"> Lecture Discussion Demonstration 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	2 hrs
	3.2Perform basic workplace calculation	<ul style="list-style-type: none"> Describe different types of calculation 	<ul style="list-style-type: none"> Lecture Discussion 	<ul style="list-style-type: none"> Written exam Oral questioning 	(Total -8 hrs) 1 hr
		<ul style="list-style-type: none"> Discuss different methods of calculation 	<ul style="list-style-type: none"> Lecture Discussion 	<ul style="list-style-type: none"> Written exam Oral questioning 	1 hr

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Method	Nominal Duration
		<ul style="list-style-type: none"> • Describe system and unit of measurement 	<ul style="list-style-type: none"> • Lecture • Discussion 	<ul style="list-style-type: none"> • Written exam • Oral questioning 	2 hrs
		<ul style="list-style-type: none"> • Compute quantity of feeds, amount of fertilizer and amount of medicines using methods of calculation, system of measurement and units of measurement 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration 	<ul style="list-style-type: none"> • Written exam • Oral questioning 	4 hrs

**CORE COMPETENCIES
(110 Hrs.)**

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
1. Operate bamboo nursery	1.1. Conduct pre-nursery operation	<ul style="list-style-type: none"> Discuss criteria for selecting nursery sites 	<ul style="list-style-type: none"> Lecture Discussion Nursery visit Presentation 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	(Total-49 hrs) 2 Hours
		<ul style="list-style-type: none"> Explain nursery plan 	<ul style="list-style-type: none"> Lecture Discussion Nursery visit Presentation Flip chart 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hours
		<ul style="list-style-type: none"> Explain procedure in securing nursery sites 	<ul style="list-style-type: none"> Lecture Discussion Nursery visit Presentation 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 hour
		<ul style="list-style-type: none"> Describe the rooting facilities and nursery beds 	<ul style="list-style-type: none"> Lecture Discussion Nursery visit Presentation 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hours
		<ul style="list-style-type: none"> Describe supplies , tools and materials for securing nursery sites 	<ul style="list-style-type: none"> Lecture Discussion Nursery visit Presentation 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	1 Hours
		<ul style="list-style-type: none"> Explain reporting procedures 	<ul style="list-style-type: none"> Lecture Discussion Nursery visit Presentation 	<ul style="list-style-type: none"> Oral questioning Demonstration 	0.5 Hours
		<ul style="list-style-type: none"> Select feasible nursery site 	<ul style="list-style-type: none"> Lecture Discussion Nursery visit Presentation 	<ul style="list-style-type: none"> Oral questioning Demonstration 	6 Hours

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
		<ul style="list-style-type: none"> Follow nursery plan 	<ul style="list-style-type: none"> Lecture Discussion Presentation 	<ul style="list-style-type: none"> Oral questioning Demonstration 	1 Hour
		<ul style="list-style-type: none"> Secure nursery sites 	<ul style="list-style-type: none"> Lecture Discussion Presentation 	<ul style="list-style-type: none"> Oral questioning Demonstration 	1 Hour
		<ul style="list-style-type: none"> Prepare rooting facilities and nursery beds 	<ul style="list-style-type: none"> Lecture Discussion Nursery visit Presentation 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	3.5 Hours
		<ul style="list-style-type: none"> Prepare tools and equipment and materials 	<ul style="list-style-type: none"> Lecture Discussion Nursery visit Presentation 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hours
		<ul style="list-style-type: none"> Report work output 	<ul style="list-style-type: none"> Lecture Discussion Presentation 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	1 Hour
	1.2 Perform nursery operation	<ul style="list-style-type: none"> Identify culms as sources of propagules 	<ul style="list-style-type: none"> Lecture Discussion Demonstration Hands-on 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Enumerate collection and preparation of propagules 	<ul style="list-style-type: none"> Lecture Discussion Demonstration Hands-on 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Explain different types of rooting hormones and their application procedure 	<ul style="list-style-type: none"> Lecture Discussion Demonstration at nursery Hands-on at nursery 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 hour

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
		<ul style="list-style-type: none"> Differentiate rooting procedures in pots and rooting beds 	<ul style="list-style-type: none"> Lecture Discussion Demonstration at nursery Hands-on at nursery 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Discuss different potting media and potting procedures 	<ul style="list-style-type: none"> Lecture Discussion Demonstration at nursery Hands-on at nursery 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Explain the procedure in transferring directly potted propagules and potted rooted propagules to nursery bed 	<ul style="list-style-type: none"> Lecture Discussion Demonstration at nursery Hands-on at nursery 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Discuss workplace procedure in maintaining nursery area 	<ul style="list-style-type: none"> Lecture Discussion Demonstration at nursery Hands-on at nursery 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Discuss OSHS 	<ul style="list-style-type: none"> Lecture Discussion Video presentation 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Select culm as source of propagules 	<ul style="list-style-type: none"> Lecture Discussion Demonstration Hands-on Field visit 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	1 Hour
		<ul style="list-style-type: none"> Collect and prepare propagules 	<ul style="list-style-type: none"> Lecture Discussion 	<ul style="list-style-type: none"> Written exam 	3 Hours

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
			<ul style="list-style-type: none"> • Demonstration • Hands-on • Field visit 	<ul style="list-style-type: none"> • Oral questioning • Demonstration 	
		<ul style="list-style-type: none"> • Select and apply rooting hormones 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Root propagules in pots and rooting beds 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	1 Hour
		<ul style="list-style-type: none"> • Pot rooted propagules 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	1 Hour
		<ul style="list-style-type: none"> • Transfer directly potted propagules and potted rooted propagules to nursery bed 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	1 Hour
		<ul style="list-style-type: none"> • Maintain nursery area 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	1 Hour
	1.3 Maintain nursery stocks	<ul style="list-style-type: none"> • Explain various nursery cultural practices with reference to species requirement 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration at nursery • Hands-on at nursery 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	2 Hours
		<ul style="list-style-type: none"> • Discuss OSHS 	<ul style="list-style-type: none"> • Lecture • Discussion • Video presentation 	<ul style="list-style-type: none"> • Written exam • Oral questioning 	0.5 Hour

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
				<ul style="list-style-type: none"> Demonstration 	
		<ul style="list-style-type: none"> Carry-out various nursery cultural practices with reference to species requirement 	<ul style="list-style-type: none"> Lecture Discussion Video presentation Hands –on 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	6 Hour
		<ul style="list-style-type: none"> Practice safety measures 	<ul style="list-style-type: none"> Lecture Discussion demonstration 	<ul style="list-style-type: none"> Written exam Oral questioning demonstration 	0.5 Hour
	1.4 Conduct Post Nursery Operations	<ul style="list-style-type: none"> Explain grading standards of planting stocks 	<ul style="list-style-type: none"> Lecture Discussion Demonstration Video presentation 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Discuss marketing procedures 	<ul style="list-style-type: none"> Lecture Discussion Demonstration Role playing 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Discuss the different types of packaging materials, including packaging, dispatching and handling procedures of planting stocks 	<ul style="list-style-type: none"> Video presentation Discussion Lecture Hands-on Demonstration 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Explain the inventory, maintenance and storing procedures for tools and equipment 	<ul style="list-style-type: none"> Lecture Discussion Demonstration Video presentation 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Explain the maintenance procedures of working area 	<ul style="list-style-type: none"> Lecture Discussion Demonstration 	<ul style="list-style-type: none"> Written exam Oral questioning 	0.5 Hour

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
			<ul style="list-style-type: none"> • Video presentation 	<ul style="list-style-type: none"> • Demonstration 	
		<ul style="list-style-type: none"> • Discuss the procedure in recording and reporting work activities and outputs 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Grade planting stocks 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration 	1 Hour
		<ul style="list-style-type: none"> • Sell quality planting materials 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Video presentation 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Package, dispatch and handle quality planting stocks 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Video presentation 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	1 Hour
		<ul style="list-style-type: none"> • Prepare inventory of tools, equipment and supplies 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	1 Hour
		<ul style="list-style-type: none"> • Store and maintain tools and equipment 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	1 Hour
		<ul style="list-style-type: none"> • Maintain safe and clean working area 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	1 Hour

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
		<ul style="list-style-type: none"> Record and report work activities and outputs 	<ul style="list-style-type: none"> Lecture Discussion Demonstration 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	1 Hour
2. Establish Bamboo Farm	2.1. Conduct pre-establishment activities	<ul style="list-style-type: none"> Interpret plantation plan 	<ul style="list-style-type: none"> Lecture Discussion Demonstration 	<ul style="list-style-type: none"> Written exam Oral Questioning 	(Total -25 hrs) 1 Hour
		<ul style="list-style-type: none"> Discuss the procedures in characterizing the site and species site requirements 	<ul style="list-style-type: none"> Lecture Discussion Demonstration Role playing Farm visit 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	1 Hour
		<ul style="list-style-type: none"> Describe the different types and uses of tools, equipment supplies and materials 	<ul style="list-style-type: none"> Lecture Discussion Demonstration 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hours
		<ul style="list-style-type: none"> Discuss the procedure in marking boundaries 	<ul style="list-style-type: none"> Lecture Discussion Demonstration Hands-on Farm visit 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hours
		<ul style="list-style-type: none"> Discuss the procedure in site preparation 	<ul style="list-style-type: none"> Lecture Discussion Demonstration Hands-on Farm visit 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hours
		<ul style="list-style-type: none"> Follow plantation plan 	<ul style="list-style-type: none"> Lecture Discussion Demonstration 	<ul style="list-style-type: none"> Written exam Oral Questioning 	1 Hour

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
		<ul style="list-style-type: none"> • Carry out species-site matching 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Role playing • Farm visit 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	2 Hours
		<ul style="list-style-type: none"> • Prepare equipment, tools, supplies and materials 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Lay-out and mark boundaries 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Hands-on • Farm visit 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	2 Hour
		<ul style="list-style-type: none"> • Prepare site 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Hands-on • Farm visit 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	2 Hour
	2.2. Plant bamboo stocks	<ul style="list-style-type: none"> • Discuss various planting techniques 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Hands-on • Farm visit 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	1Hour
		<ul style="list-style-type: none"> • Discuss the early tending procedures 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Hands-on • Farm visit 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	0.5 Hour

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
		<ul style="list-style-type: none"> • Explain safe working practices and working environment 	<ul style="list-style-type: none"> • Lecture • Discussion • Video presentation 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Carry out planting of stocks 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Hands-on • Farm visit 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	1 Hour
		<ul style="list-style-type: none"> • Perform early tending operations 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Hands-on • Farm visit 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	1 Hour
		<ul style="list-style-type: none"> • Practice safety measures 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Hands-on • Farm visit 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	0.5 Hour
	2.3 Maintain Bamboo Farm	<ul style="list-style-type: none"> • Interpret schedule of maintenance activities 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Hands-on • Farm visit 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Explain maintenance activities 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Hands-on • Farm visit 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	1 Hour

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
		<ul style="list-style-type: none"> Discuss procedures in accomplishing monitoring checklist 	<ul style="list-style-type: none"> Lecture Discussion Video presentation Demonstration Hands-on 	<ul style="list-style-type: none"> Oral question Written exam Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Explain safe working practices and working environment 	<ul style="list-style-type: none"> Lecture Discussion Demonstration 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Follow schedule of maintenance activities 	<ul style="list-style-type: none"> Lecture Discussion Demonstration Hands-on Farm visit 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	1 Hour
		<ul style="list-style-type: none"> Perform maintenance activities 	<ul style="list-style-type: none"> Lecture Discussion Video presentation Demonstration Hands-on 	<ul style="list-style-type: none"> Oral question Written exam Demonstration 	2 Hours
		<ul style="list-style-type: none"> Accomplish monitoring checklist 	<ul style="list-style-type: none"> Lecture Discussion Video presentation Demonstration Hands-on 	<ul style="list-style-type: none"> Oral question Written exam Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Practice safety measures 	<ul style="list-style-type: none"> Lecture Discussion Demonstration 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hour
	2.4 Conduct Post Establishment Operation	<ul style="list-style-type: none"> Discuss the procedure in maintaining a safe plantation area 	<ul style="list-style-type: none"> Lecture Discussion Video presentation 	<ul style="list-style-type: none"> Oral question Written exam Demonstration 	0.5 Hour

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
			<ul style="list-style-type: none"> • Demonstration • Hands-on 		
		<ul style="list-style-type: none"> • Discuss waste management and environmental regulations 	<ul style="list-style-type: none"> • Lecture • Discussion • Video presentation • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Oral question • Written exam • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Explain inventory, maintenance and storage of tools, materials and equipment 	<ul style="list-style-type: none"> • Lecture • Discussion • Video presentation • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Oral question • Written exam • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Maintain safe working area 	<ul style="list-style-type: none"> • Lecture • Discussion • Video presentation • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Oral question • Written exam • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Manage waste 	<ul style="list-style-type: none"> • Lecture • Discussion • Video presentation • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Oral question • Written exam • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Inventory, maintain and store tools, materials and equipment 	<ul style="list-style-type: none"> • Lecture • Discussion • Video presentation • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Oral question • Written exam • Demonstration 	0.5 Hour
3. Conduct Bamboo Clump Rehabilitation	3.1. Conduct pre-clump rehabilitation activities	<ul style="list-style-type: none"> • Discuss the assessment of clump conditions and rehabilitation plan 	<ul style="list-style-type: none"> • Lecture • Discussion • Presentation 	<ul style="list-style-type: none"> • Oral questioning • Written exam 	(Total -18.5 hrs) 0.5 Hour

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
			<ul style="list-style-type: none"> • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Demonstration 	
		<ul style="list-style-type: none"> • Describe different types and uses of tools, equipment, supplies and materials 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration 	<ul style="list-style-type: none"> • Oral questioning • Written exam • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Explain safe working practices and working environment 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration 	<ul style="list-style-type: none"> • Oral questioning • Written exam • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Assess clump conditions and follow rehabilitation plan 	<ul style="list-style-type: none"> • Lecture • Discussion • Presentation • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Oral questioning • Written exam • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Prepare equipment, tools, supplies and materials 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration 	<ul style="list-style-type: none"> • Oral questioning • Written exam • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Apply safety measures 	<ul style="list-style-type: none"> • Lecture • Discussion • Demonstration 	<ul style="list-style-type: none"> • Oral questioning • Written exam • Demonstration 	0.5 Hour
	3.2 Perform Clump Rehabilitation activities	<ul style="list-style-type: none"> • Explain clump rehabilitation procedures 	<ul style="list-style-type: none"> • Lecture • Discussion • Presentation • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Oral questioning • Written exam • Demonstration 	1 Hour

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
		<ul style="list-style-type: none"> • Discuss various maintenance practices for rehabilitated clumps 	<ul style="list-style-type: none"> • Lecture • Discussion • Presentation • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Oral questioning • Written exam • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Discuss monitoring procedures for culm age 	<ul style="list-style-type: none"> • Lecture • Discussion • Presentation • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Oral questioning • Written exam • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Explain safe work and work environment 	<ul style="list-style-type: none"> • Lecture • Practical demonstration • Discussion 	<ul style="list-style-type: none"> • Oral questioning • Written exam • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Apply clump rehabilitation procedures 	<ul style="list-style-type: none"> • Lecture • Discussion • Presentation • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Oral questioning • Written exam • Demonstration 	4 Hours
		<ul style="list-style-type: none"> • Maintain rehabilitated clumps 	<ul style="list-style-type: none"> • Lecture • Discussion • Presentation • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Oral questioning • Written exam • Demonstration 	1 Hour
		<ul style="list-style-type: none"> • Perform monitoring of culm age by marking 	<ul style="list-style-type: none"> • Lecture • Discussion • Presentation • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Oral questioning • Written exam • Demonstration 	0.5 Hour

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
		<ul style="list-style-type: none"> Apply clump rehabilitation procedures 	<ul style="list-style-type: none"> Lecture Discussion Presentation Demonstration Hands-on 	<ul style="list-style-type: none"> Oral questioning Written exam Demonstration 	4 Hours
		<ul style="list-style-type: none"> Apply safety measures 	<ul style="list-style-type: none"> Lecture Practical demonstration Discussion 	<ul style="list-style-type: none"> Oral questioning Written exam Demonstration 	0.5 Hour
	3.3 Perform Post Rehabilitation activities	<ul style="list-style-type: none"> Explain inventory, maintenance and storage of tools, materials and equipment 	<ul style="list-style-type: none"> Lecture Discussion Presentation Demonstration Hands-on 	<ul style="list-style-type: none"> Oral questioning Written exam Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Discuss waste management 	<ul style="list-style-type: none"> Lecture Demonstration Discussion 	<ul style="list-style-type: none"> Oral questioning Written exam Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Discuss record keeping and reporting procedures 	<ul style="list-style-type: none"> Lecture Demonstration Discussion 	<ul style="list-style-type: none"> Oral questioning Written exam Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Inventory, maintain and store tools, materials and equipment 	<ul style="list-style-type: none"> Lecture Discussion Presentation Demonstration Hands-on 	<ul style="list-style-type: none"> Oral questioning Written exam Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Manage wastes 	<ul style="list-style-type: none"> Lecture Demonstration Discussion 	<ul style="list-style-type: none"> Oral questioning Written exam Demonstration 	0.5 Hour

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
		<ul style="list-style-type: none"> Record and report work activities and outputs 	<ul style="list-style-type: none"> Lecture Demonstration Discussion 	<ul style="list-style-type: none"> Oral questioning Written exam Demonstration 	0.5 Hour
4. Conduct Harvesting and Post Harvesting Operations	4.1. Undertake pre-harvesting activities	<ul style="list-style-type: none"> Discuss market demands and transactions 	<ul style="list-style-type: none"> Lecture Discussion Presentation Demonstration Hands-on 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	(Total -17.5 hrs) 0.5 Hour
		<ul style="list-style-type: none"> Interpret harvesting plan 	<ul style="list-style-type: none"> Lecture Discussion Presentation Demonstration Hands-on 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Identify equipment, tools, supplies and materials for harvesting 	<ul style="list-style-type: none"> Lecture Demonstration Discussion 	<ul style="list-style-type: none"> Oral questioning Written exam Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Perform market transactions 	<ul style="list-style-type: none"> Lecture Discussion Presentation Demonstration Hands-on 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Prepare harvesting plan 	<ul style="list-style-type: none"> Lecture Discussion Presentation Demonstration Hands-on 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	1 Hour
		<ul style="list-style-type: none"> Prepare Harvesting equipment, tools, supplies and materials 	<ul style="list-style-type: none"> Lecture Discussion Presentation 	<ul style="list-style-type: none"> Written exam Oral questioning 	0.5 Hour

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
			<ul style="list-style-type: none"> • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Demonstration 	
	4.2 Performing harvesting operations	<ul style="list-style-type: none"> • Discuss harvesting procedures 	<ul style="list-style-type: none"> • Lecture • Discussion • Presentation • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	1 Hour
		<ul style="list-style-type: none"> • Explain procedures in preparing harvested culms 	<ul style="list-style-type: none"> • Lecture • Discussion • Presentation • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Explain safety measures 	<ul style="list-style-type: none"> • Lecture • Demonstration • Discussion 	<ul style="list-style-type: none"> • Oral questioning • Written exam • Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> • Harvest culms and shoots 	<ul style="list-style-type: none"> • Lecture • Discussion • Presentation • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	4 Hours
		<ul style="list-style-type: none"> • Prepare harvested culms 	<ul style="list-style-type: none"> • Lecture • Discussion • Presentation • Demonstration • Hands-on 	<ul style="list-style-type: none"> • Written exam • Oral questioning • Demonstration 	1 Hour
		<ul style="list-style-type: none"> • Apply safety measures 	<ul style="list-style-type: none"> • Lecture • Demonstration • Discussion 	<ul style="list-style-type: none"> • Oral questioning • Written exam • Demonstration 	0.5 Hour

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
	4.3 Carry-out Post- harvest activities	<ul style="list-style-type: none"> Describe procedures in cutting harvested culms with reference to market requirements 	<ul style="list-style-type: none"> Lecture Demonstration Discussion 	<ul style="list-style-type: none"> Oral questioning Written exam Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Explain different methods of treating harvested culms 	<ul style="list-style-type: none"> Lecture Demonstration Discussion 	<ul style="list-style-type: none"> Oral questioning Written exam Demonstration 	1 Hour
		<ul style="list-style-type: none"> Discuss the procedure in completing market transactions 	<ul style="list-style-type: none"> Lecture Discussion Presentation Demonstration Hands-on Role playing 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Explain safety measures 	<ul style="list-style-type: none"> Lecture Practical demonstration Discussion 	<ul style="list-style-type: none"> Oral questioning Written exam Demonstration 	0.5 Hour
		<ul style="list-style-type: none"> Cut harvested culms 	<ul style="list-style-type: none"> Lecture Demonstration Discussion 	<ul style="list-style-type: none"> Oral questioning Written exam Demonstration 	2 Hours
		<ul style="list-style-type: none"> Apply prophylactic treatment 	<ul style="list-style-type: none"> Lecture Demonstration Discussion 	<ul style="list-style-type: none"> Oral questioning Written exam Demonstration 	1 Hour
		<ul style="list-style-type: none"> Complete market transactions 	<ul style="list-style-type: none"> Lecture Discussion Presentation Demonstration Hands-on 	<ul style="list-style-type: none"> Written exam Oral questioning Demonstration 	0.5 Hour

Unit of Competency	Learning Outcomes	Learning Activities	Methodology	Assessment Approach	Nominal Duration
			<ul style="list-style-type: none"> • Role playing 		
		<ul style="list-style-type: none"> • Apply safety measures 	<ul style="list-style-type: none"> • Lecture • Practical demonstration • Discussion 	<ul style="list-style-type: none"> • Oral questioning • Written exam • Demonstration 	0.5 Hour

3.2 TRAINING DELIVERY

1. The delivery of training shall adhere to the design of the curriculum. Delivery shall be guided by the principles of competency-based TVET.
 - a. Course design is based on competency standards set by the industry or recognized industry sector; (Learning system is driven by competencies written to industry standards)
 - b. Training delivery is learner-centered and should accommodate individualized and self-paced learning strategies;
 - c. Training can be done on an actual workplace setting, simulation of a workplace and/or through adoption of modern technology.
 - d. Assessment is based in the collection of evidence of the performance of work to the industry required standards;
 - e. Assessment of competency takes the trainee's knowledge and attitude into account but requires evidence of actual performance of the competency as the primary source of evidence.
 - f. Training program allows for recognition of prior learning (RPL) or current competencies;
 - g. Training completion is based on satisfactory performance of all specified competencies.
2. 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 and their variations/ components may be adopted singly or in combination with other modalities when designing and delivering training programs:

2.1. Institution- Based:

Classroom-based or school-based training conducted entirely within the school or center, with classroom and/or laboratory components.

- Dual Training System (DTS)/Dualized Training Program (DTP) which contain both in-school and in-industry training or fieldwork components. Details can be referred to the Implementing Rules and Regulations of the DTS Law and the TESDA Guidelines on the DTP;
- 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, audio, video, computer technologies or other modern technology that can be used to facilitate learning and formal and non-formal training. Specific guidelines on this mode shall be issued by the TESDA Secretariat.

- Supervised Industry Training (SIT) or on-the-job training (OJT) 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 as prescribed in the training regulations. It is imperative that the deployment of trainees in the workplace is adhered to training programs agreed by the institution and enterprise and status and progress of trainees are closely monitored by the training institutions to prevent opportunity for work exploitation.
- The traditional classroom-based or in-center instruction may be enhanced through use of learner-centered methods as well as laboratory or field-work components.

2.2 Enterprise-Based:

- **Formal Apprenticeship** – Training within employment involving a contract between an apprentice and an enterprise on an approved apprenticeable occupation.
- **Informal Apprenticeship** - is based on a training (and working) agreement between an apprentice and a master craftsperson wherein the agreement may be written or oral and the master craftsperson commits to training the apprentice in all the skills relevant to his or her trade over a significant period of time, usually between one and four years, while the apprentice commits to contributing productively to the work of the business. Training is integrated into the production process and apprentices learn by working alongside the experienced craftsperson.
- **Enterprise-based Training**- where training is implemented within the company in accordance with the requirements of the specific company. Specific guidelines on this mode shall be issued by the TESDA Secretariat.

2.3 Community-Based

Refers to a short program conducted or coordinated by NGOs, LGUs, training centers and other TVET providers which are intended to address the specific needs of a community. Such programs are usually conducted in informal settings such as barangay hall, basketball courts and other available venues in a community.

Peer teaching/mentoring is a training modality wherein fast learners are given the opportunity to assist the slow learners.

3.3 TRAINEE ENTRY REQUIREMENTS:

Trainees or students wishing to gain entry into this course should possess the following requirements:

- Able to read and write;
- Able to communicate, both orally and in writing; and
- Basic mathematical skills

3.4 TOOLS, MATERIALS AND EQUIPMENT

Recommended list of tools, equipment and materials for the training of 25 trainees for **BAMBOO PRODUCTION NC II** are as follows.

Up-to-date tools, materials and equipment of equivalent functions can be used as alternatives.

TOOLS		EQUIPMENT		MATERIALS	
QTY	Description	QTY	Description	QTY	Description
Operate Bamboo Nursery					
12 pcs	Pruning shears	2 units	Grass cutter	25 sets	PPE -hard hat -goggles -gloves -rubber boots -mask -farmer shirt
				25 pcs	Rain coats
12 pcs	Pruning saw				Office materials -record book -25 -pen/pencil-25 -labels/tag-25 -marking pen-25
12 pcs	Lopping shears			250 pcs (various sizes)	Poly bags
6 pcs	shovel			1L	Insecticide
6 pcs	pick mattock			50K	Fertilizers (organic)
6 pcs	Grab hoe			25K	Fertilizers (inorganic)
6 pcs	digging bar			5 L	fuel
6 pcs	wheel barrow			1L	Lubricants (2T)
6 pcs	hack saw			1 sack	Rice hull
6 pcs	Scythe			1 sack	Saw dust
12 pcs	bolo(3-4 inch width)			1 sack	coco coir
1 pc	Backpack sprayer			2 cu. m.	sand
				1 L	Rooting hormones
				5 pcs	Half drum (for soaking)
Establish Bamboo Farm					

TOOLS		EQUIPMENT		MATERIALS	
QTY	Description	QTY	Description	QTY	Description
6 pcs	shovel	1unit	Mini-chain saw	25 sets	PPE -hard hat -goggles -gloves -rubber boots -mask -farmer shirt
6 pcs	digging bar				Office materials -record book -25 -pen/pencil-25 -labels/tag-25 -marking pen-25
6 pcs	wheel barrow			1L	Insecticide
1pc	Backpack sprayer			50K	Fertilizers (organic)
6 pcs	Post hole digger			25K	Fertilizers (inorganic)
6 pcs	Scythe			2L	fuel
12 pcs	bolo(3-4 inch width)			250 ml	Lubricants (2T)
				1 L	Motor oil
				100 pcs	stakes
Conduct bamboo clump rehabilitation					
6 pcs	shovel	1unit	Mini-chain saw	25 sets	PPE -hard hat -goggles -gloves -rubber boots -mask -farmer shirt
6 pcs	digging bar			1L	Insecticide
6 pcs	wheel barrow			25K	Fertilizers (organic)
				50K	Fertilizers (inorganic)
12 pcs	Pruning shears			2 L	fuel
5 pcs	Scythe			250 ml	Lubricants (2T)
12 pcs	bolo			1 L	Motor oil
12 pcs	Pruning saw				
12 pcs	Lopping shears				
Conduct harvesting and post-harvesting operations					
12 pcs	Pruning saw	1unit	Mini-chain saw	25 sets	PPE -hard hat -goggles - Thick gloves -rubber boots -mask -farmer shirt
12 pcs	Pruning shears			250 ml	Lubricants (2T)
12 pcs	Lopping shears			2L	fuel
6 pcs	axe			1 L	Motor oil

TOOLS		EQUIPMENT		MATERIALS	
QTY	Description	QTY	Description	QTY	Description
12 pcs	Bolo(3-4 inch width)			20 m	Rope

Note: Access to and use of equipment/facilities can be provided through cooperative arrangements of MOA with other partner-companies/institutions.

3.5 TRAINING FACILITIES

Based on class size of **25** students / trainees the space requirements for the teaching / learning and curriculum areas are as follows.

SPACE REQUIREMENT	SIZE IN METERS	AREA IN SQ. METERS	TOTAL AREA IN SQ. METERS	GRAND TOTAL AREA IN SQ. METERS
A. Building (permanent)				95.00
• Student/Trainee Working Space	2.00 x 1.00 per student/trainee	2.00 per student	50.00	
• Learning Resource Center	3.00 x 5.00	15.00	15.00	
Activity Room				
• wash room/ comfort room	2.00 x 3.00	6.00	18.00	
• male				
• female	2.00 x 3.00	6.00		
• PWD	2.00 x 3.00	6.00		
• store room	3.00 x 4.00		12.00	
B.Demo Farm				2,550.00
• Nursery area	1 x 2 per trainee	2 per trainee	50.00	
• Field plot and Working shed (100sq.m.)	10 x 10 per trainee	100 per trainee	2500.00	

Note: Access to and use of equipment/facilities can be provided through cooperative arrangements of MOA with other partner-companies/institutions.

3.6 TRAINER'S QUALIFICATIONS FOR BAMBOO PRODUCTION NC II

Trainers who will deliver the training on BAMBOO PRODUCTION NC II should possess the following qualifications:

- Holder of NTTC (NC + TM1) in Bamboo Production NC II
- With 2-year industry experience for the last 5 years

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.

The result of the institutional assessment may be considered as evidence for the assessment for national certification.

As a matter of policy, graduates of programs registered with TESDA under these training regulations are required to undergo mandatory national competency assessment upon completion of the program.

SECTION 4 ASSESSMENT AND CERTIFICATION ARRANGEMENT

Competency Assessment is the process of collecting evidence and making judgments whether competency has been achieved. The purpose of assessment is to confirm that an individual can perform to the standards expected at the workplace as expressed in relevant competency standards.

The assessment process is based on evidence or information gathered to prove achievement of competencies. The process may be applied to an employable unit(s) of competency in partial fulfillment of the requirements of the national qualification.

4.1. NATIONAL ASSESSMENT AND CERTIFICATION ARRANGEMENTS

- 4.1.1 To attain the National Qualification of **BAMBOO PRODUCTION NC II** the candidate must demonstrate competence through a project-type assessment covering in all units listed in Section 1. Successful candidates shall be awarded a National Certificate signed by the TESDA Director General.
- 4.1.2 The qualification of Bamboo Production NC II may be attained through accumulation of Certificates of Competency (COCs) in the following clusters of competencies:

- COC 1: Operate bamboo nursery
- COC 2: Establish bamboo farm
- COC 3: Conduct bamboo clump rehabilitation
- COC 4: Conduct harvesting and post-harvesting operations

Upon accumulation and submission of all COCs acquired, an individual shall be issued the corresponding National Certificate

- 4.1.3 Assessment shall focus on the core units of competency. The basic and common units shall be integrated or assessed concurrently with the core units.
- 4.1.4 The following are qualified to apply for assessment and certification:
 - 4.1.4.1 Graduating students/trainees of WTR-registered programs, graduates of NTR programs or graduates of formal/non-formal/informal including enterprise-based trainings related to bamboo production.
 - 4.1.4.2 Experienced workers in bamboo industry
- 4.1.5 Reassessment is allowed only after one month from the date of assessment. Reassessment for a National Certificate shall be done only on the task/s that the candidate did not successfully achieve.
- 4.1.6 A candidate who fails the assessment for two (2) consecutive times will be required to go through a refresher course before taking another assessment.
- 4.1.7 Only certified individuals in this Qualification may be nominated by the industry sector for accreditation as competency assessor.

4.2. . COMPETENCY ASSESSMENT REQUISITE

- 4.2.1 Self-Assessment Guide. The self-assessment guide (SAG) is accomplished by the candidate prior to actual competency assessment. SAG is a pre-assessment tool to help the candidate and the assessor determine what evidence is available, where gaps exist, including readiness for assessment.

This document can:

- a) Identify the candidate's skills and knowledge
- b) Highlight gaps in candidate's skills and knowledge
- c) Provide critical guidance to the assessor and candidate on the evidence that need to be presented
- d) Assist the candidate to identify key areas in which practice is needed or additional information or skills that should be gained prior `

- 4.2.2 Accredited Assessment Center. Only Assessment Center accredited by TESDA is authorized to conduct competency assessment. Assessment centers undergo a quality assured procedure for accreditation before they are authorized by TESDA to manage the assessment for National Certification.

- 4.2.3 Accredited Competency Assessor. Only accredited competency assessor is authorized to conduct assessment of competence. Competency assessors undergo a quality assured system of accreditation procedure before they are authorized by TESDA to assess the competencies of candidates for National Certification.

4.2.3.1 Qualification of Competency Assessors

For Trainer-Assessor

- Holder of National TVET Trainer Certificate Level I (NTTC) in Bamboo Production NC II with at least 2 years relevant industry experience for the last five (5) years

For Industry-Assessor

- Holder of National Certificate in Bamboo Production NCII
- Holder of Certificate of Competency (COC) in Conduct Competency under the Trainers Methodology Level I (TM I)
- Must have at least 2 years relevant industry experience for the last five (5) years

COMPETENCY MAP –BAMBOO PEODUCTION NC II

BASIC COMPETENCIES

Receive and respond to workplace communication	Work with others	Demonstrate work values	Practice basic housekeeping procedures	Participate in workplace communication	Work in team environment	Practice career professionalism
Practice occupational health and safety procedures	Lead workplace communication	Lead small team	Develop and practice negotiation skills	Solve problems related to work activities	Use mathematical concepts and techniques	Practice occupational health and safety procedures
Utilize specialized communication skills	Develop teams and individuals	Apply problem solving techniques in the workplace	Collect, analyze and organize information	Plan and organize work	Promote environmental protection	Use relevant technologies

COMMON COMPETENCIES

Apply Safety Measures in Farm Operations	Use Farm Tools and Equipment	Perform Estimation and Basic Calculation
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CORE COMPETENCIES

Operate bamboo nursery	Establish bamboo farm	Conduct bamboo clump rehabilitation	Conduct harvesting and post-harvesting operations
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GLOSSARY OF TERMS

1. Branch cutting	Segment of a branch with nodal rhizomatous bud used for propagations
2. Bud	Potential shoot
3. Clump	Cluster of bamboo stems growing from underground rhizome system
4. Culm	Above ground stem which grows from the underground rhizomes
5. Culm cutting	Segments of a culm having one or more buds used for propagations
6. Early tending operations	Preliminary activities(Initial fertilizer application, mulching, weeding and replacement of dead planting materials) for the first three years of plantation
7. Hardening off	Preparing the planting stocks for out planting
8. Heeling – in	Thumping the soil around the planting stock
9. Inorganic Fertilizer	Chemical or synthetic based fertilizers
10. Kiln drying	Method of removing moisture from the culm using a dry kiln
11. Manual Harvesting	Cutting of bamboo culms using simple tools
12. Mechanical harvesting	Cutting of bamboo culms using equipment
13. Mist propagation chamber	Controlled delivery of water in mist form
14. Mounding	Piling up of soils and organic debris around the clump
15. Mulching	Protective covering usually of organic matter to prevent moisture loss and growth of weeds
16. Nursery bed	Loosened soil where cuttings are rooted
17. Nursery stocks	bamboo propagules under nursery condition
18. Organic Fertilizer	Natural fertilizer
19. OSHS	Occupational Safety and Health Standards
20. Planting stocks	Propagules ready for out planting
21. Pole	Cut culm
22. PPE	Personal protective equipment
23. Potting medium	Mixes of materials(soil plus saw dust, rice hull, etc.) used for growing plants in pots
24. Propagules	Planting materials (stocks)
25. Prophylactic	application of preservatives to the culm immediately after harvesting
26. Pruning	Cutting of unwanted branches
27. Rhizome	Thick, horizontal bamboo stem
28. Rooting facilities	Area where propagules are rooted
29. Rooting hormones	Chemicals that induce rooting
30. Sap replacement	Method of applying preservatives by dipping the butt end of the freshly cut culms while the branches and leaves are intact
31. Shoots	Young culm less than 30 days old
32. Species-site matching	Compatibility of species to a specific site
33. Staking	Putting stake as a guide in laying out of planting holes
34. Weeding	Removal of unwanted vegetation
35. 3Rs	Reduce, Reuse and Recycle



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THE TECHNICAL EXPERT PANEL (TEP)

MR. TYSON P. ESTANGKI

Technical Expert
Philippine Bamboo Foundation, Inc
Makati City

MR. ARMANDO M. PALIJON

Technical Expert
Philippine Bamboo Foundation, Inc
Makati City

MR. MICHAEL S. GOMEZ

Technical Expert
Philippine Bamboo Foundation, Inc
Makati City

MR. PRUDENCIO D. TEODORO

Technical Expert
Philippine Bamboo Foundation, Inc
Makati City

MS. AIDA B. LAPIS

Technical Expert
Philippine Bamboo Foundation, Inc
Makati City

MR. FLORENTINO O. TESORO

Technical Expert
Philippine Bamboo Foundation, Inc
Makati City

MR. EDGARDO C. MANDA

Technical Expert
Philippine Bamboo Foundation, Inc
Makati City

MR. FELIZARDO D. VIRTUCIO

Technical Expert
Philippine Bamboo Foundation, Inc
Makati City

THE PARTICIPANTS OF NATIONAL VALIDATION

Lubao, Pampanga

Mr. MARIANO Y. GALARRITA

Lubao Bamboo Hub
Lubao, Pampanga

Mr. PERRY R. ROQUE

Lubao Bamboo Hub
Luboa, Pampanga

Mr. FRANCIS M. KATSUMI

Cabaluyan Bamboo
Mangatarem, Pangasinan

Ms. FATIMA T. TANGAN

Bakakang, Baguio City

Mr. LEONCIO L. OCULTO

Private Bamboo Nursery
Pantabangan, Nueva Ecija

Ms. LAILA P. TULABUT

Lubao Bamboo Hub
Lubao, Pampanga

Mr. LOPE C. RINGCONADA

Ed's Farm Inc.
San Jose, Antipolo City

Mr. PEDRO T. UERA

Pantambangan, Nueva Ecija

Qualifications and Standards Office, TESDA

Mr. FREDERICK ANGELES
Batasan Hills, Quezon City

Mr. DEOGRACIAS VICTOR SAVELLANO
Cabugao, Ilocos Sur

Mr. VENUS S. BANASIHAN
Bamboo Network of the Philippines, Inc.

Mankilam, Tagum City

Mr. ROGELIO A. BABATU-ON
Rey Millan Farm
Mankilam, Tagum City

Mr. REY ERNESTO N. MILLAN
Rey Millan Farm
Mankilam, Tagum City

Mr. EULOGIO L. GUDITO
Rey Millan Farm
Mankilam, Tagum City

Malaybalay City

Mr. JOYCEY J. CABUGSA
Germinants Farm
Impalutao, Malaybalay City

MS. CELONICA I. DOMINAO
Germinants Farm
Impalutao, Malaybalay City

Ms. MYRNA S. DECIPULO
Germinants Farm
Impalutao, Malaybalay City

Mr. ANTONIO O. DOMINAO
Germinants Farm
Impalutao, Malaybalay City

Ms. ROBERTO S. DECIPULO
Germinants Farm
Impalutao, Malaybalay City

The Members of the TESDA Board and Secretariat

The MANAGEMENT and STAFF of the TESDA Secretariat

- Qualifications and Standards Office (QSO)

TESDA – QSO Technical Facilitators

Competency Standards Development Division

MS. BERNADETTE N. SERVAZ- AUDIJE
MS. CHERRY L. TORALDE
MS. MELCHRIS A. ATIS

Competency Programs and Standards Development Division

MS. MERCEDES E. JAVIER
MS. FORTUNATA L. BACO

*Training Regulation are available in both printed and electronic copies
For more information, please contact:*

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY (TESDA)

*Telephone Nos.:817-4076 to 82 loc. 163 / 164 Tele Fax No.:818-7728
or visit our website: www.tesda.gov.ph*