COMPETENCY STANDARDS

CACAO PRODUCTION LEVEL II

AGRICULTURE, FORESTRY AND FISHERY SECTOR

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
TESDA Complex East Service Road, South Luzon Expressway (SLEX), Fort Bonifacio, Taguig City

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.

TRAINING REGULATIONS FOR

CACAO PRODUCTION LEVEL II

SECTION 1.   CACAO PRODUCTION LEVEL II QUALIFICATION

The **CACAO PRODUCTION LEVEL II** Qualification consists of competencies that a person must have in order to perform basic nursery operation for cacao seedlings, plant cacao seedlings, grow and maintain cacao plants, carry-out harvest and post-harvest activities, Competencies focus on production, that is from seedlings to harvesting of the cacao pods. It also comprises of competencies to handle farm operation in small scale, which is farm (1 to 5 hectares).

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

The Units of Competency comprising this Qualification include the following:

CODE NO.	BASIC COMPETENCIES
400311210	Participate in workplace communication
400311211	Work in team environment
400311212	Solve/address general workplace problems
400311213	Develop career and life decisions
400311214	Contribute to workplace innovation
400311215	Present relevant information
400311216	Practice occupational safety and health policies and procedures
400311217	Exercise efficient and effective sustainable practices in the workplace
400311218	Practice entrepreneurial skills in the workplace

CODE NO.	COMMON COMPETENCIES
AGR321201	Apply safety measures in farm operations
AGR321202	Use farm tools and equipment
AGR321203	Perform estimation and basic calculation

CODE NO.	CORE COMPETENCIES
AFFXXXXXX	Perform nursery operation
AFFXXXXXX	Plant cacao crops
AFFXXXXXX	Care and maintain cacao plants
AFFXXXXXX	Carry-out harvest and post-harvest operation

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

❑ Cacao Grower
❑ Cacao Nursery Operator
❑ Cacao Farmer
❑ Cacao Harvester

SECTION 2 COMPETENCY STANDARDS

This section gives the details of the contents of the basic, common and coreunits of competency required in **CACAO PRODUCTION LEVEL II**.

BASIC COMPETENCIES

UNIT OF COMPETENCY	:	PARTICIPATE IN WORKPLACE COMMUNICATION
UNIT CODE	:	400311210
UNIT DESCRIPTOR	:	This unit covers the knowledge, skills and attitudes required to gather, interpret and convey informationin response to workplace requirements.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* 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.	1.1 Effective verbal and nonverbal communication 1.2 Different modes of communication 1.3 Medium of communication in the workplace 1.4 Organizational policies 1.5 Communication procedures and systems 1.6 Lines of Communication 1.7 Technology relevant to the enterprise and the individual's work responsibilities 1.8 Workplace etiquette	1.1 Following simple spoken language 1.2 Performing routine workplace duties following simple written notices 1.3 Participating in workplace meetings and discussions 1.4 Preparing work-related documents 1.5 Estimating, calculating and recording routine workplace measures 1.6 Relating/ Interacting with people of various levels in the workplace 1.7 Gathering and providing basic information in response to workplace requirements

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	1.7 Personal interaction is carried out clearly and concisely.		1.8 Basic business writing skills 1.9 Interpersonal skills in the workplace 1.10 Active-listening skills
2. Perform duties following workplace instructions	2.1 Written notices and instructions are read and interpreted in accordance with organizational guidelines. 2.2 Routine written instruction are followed based on established procedures. 2.3 Feedback is given to workplace supervisor based instructions/ information received. 2.4 **Workplace interactions** are conducted in a courteous manner. 2.5 Where necessary, clarifications about routine workplace procedures and matters concerning conditions of employment are sought and asked from **appropriate sources**. 2.6 Meetings outcomes are interpreted and implemented.	2.1 Effective verbal and non-verbal communication 2.2 Different modes of communication 2.3 Medium of communication in the workplace 2.4 Organizational/ Workplace policies 2.5 Communication procedures and systems 2.6 Lines of communication 2.7 Technology relevant to the enterprise and the individual's work responsibilities 2.8 Effective questioning techniques (clarifying and probing) 2.9 Workplace etiquette	2.1 Following simple spoken instructions 2.2 Performing routine workplace duties following simple written notices 2.3 Participating in workplace meetings and discussions 2.4 Completing work- related documents 2.5 Estimating, calculating and recording routine workplace measures 2.6 Relating/ Responding to people of various levels in the workplace 2.7 Gathering and providing information in response to workplace requirements 2.8 Basic questioning/ querying 2.9 Skills in reading for information 2.10 Skills in locating
3. Complete relevant work-related documents	3.1 Range of **forms** relating to conditions of employment are completed	3.1 Effective verbal and non-verbal communication 3.2 Different modes of communication	3.1 Completing work-related documents 3.2 Applying operations of

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	accurately and legibly. 3.2 Workplace data is recorded on standard workplace forms and documents. 3.3 Errors in recording information on forms/ documents are identified and acted upon. 3.4 Reporting requirements to supervisor are completed according to organizational guidelines.	3.3 Workplace forms and documents 3.4 Organizational/ Workplace policies 3.5 Communication procedures and systems 3.6 Technology relevant to the enterprise and the individual's work responsibilities	addition, subtraction, division and multiplication 3.3 Gathering and providing information in response to workplace requirements 3.4 Effective record keeping skills

RANGE OF VARIABLES

VARIABLE	RANGE
1. Appropriate sources	May include: 1.1 Team members 1.2 Supervisor/Department Head 1.3 Suppliers 1.4 Trade personnel 1.5 Local government 1.6 Industry bodies
2. Medium	May include: 2.1 Memorandum 2.2 Circular 2.3 Notice 2.4 Information dissemination 2.5 Follow-up or verbal instructions 2.6 Face-to-face communication 2.7 Electronic media (disk files, cyberspace)
3. Storage	May include: 3.1 Manual filing system 3.2 Computer-based filing system
4. Workplace interactions	May include: 4.1 Face-to-face 4.2 Telephone 4.3 Electronic and two-way radio 4.4 Written including electronic means, memos, instruction and forms 4.5 Non-verbal including gestures, signals, signs and diagrams
5. Forms	May include: 5.1 HR/Personnel forms, telephone message forms, safety reports

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Prepared written communication following standard formatof the organization 1.2 Accessed information using workplace communication equipment/systems 1.3 Made use of relevant terms as an aid to transfer information effectively 1.4 Conveyed information effectively adopting formal or informal communication
2. Resource Implications	**The following resources should be provided:** 2.1 Fax machine 2.2 Telephone 2.3 Notebook 2.4 Writing materials 2.5 Computer with Internet connection
3. Methods of Assessment	**Competency in this unit may be assessed through:** 3.1 Demonstration with oral questioning 3.2 Interview 3.3 Written test 3.4 Third-party report
4. Context for Assessment	4.1 Competency may be assessed individually in the actualworkplace or through an accredited institution

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

UNIT CODE **:** **400311211**

UNIT DESCRIPTOR **:** This unit covers the skills, knowledge and attitudes to identify one's roles and responsibilities as a member of a team.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* 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.	1.1 Group structure 1.2 Group development 1.3 Sources of information	1.1 Communicating with others, appropriately consistent with the culture of the workplace 1.2 Developing ways in improving work structure and performing respective roles in the group or organization
2. Identify one's role and responsibility within a team	2.1 Individual roles and responsibilities within the team environment are identified. 2.2 Roles and objectives of the team is identified from available *sources of information*. 2.3 Team parameters, reporting relationships and responsibilities are identified based on team discussions and appropriate external sources.	2.1 Team roles and objectives 2.2 Team structure and parameters 2.3 Team development 2.4 Sources of information	2.1 Communicating with others, appropriately consistent with the culture of the workplace 2.2 Developing ways in improving work structure and performing respective roles in the group or organization
3. Work as a team member	3.1 Effective and appropriate forms of communications are used and interactions undertaken with	3.1 Communication Process 3.2 Workplace communication protocol	3.1 Communicating appropriately, consistent with the culture of the workplace

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	team members based on company practices. 3.2 Effective and appropriate contributions made to complement team activities and objectives, based on *workplace context*. 3.3 Protocols in reporting are observed based on standard company practices. 3.4 Contribute to the development of team work plans based on an understanding of team's role and objectives.	3.3 Team planning and decision making 3.4 Team thinking 3.5 Team roles 3.6 Process of team development 3.7 Workplace context	3.2 Interacting effectively with others 3.3 Deciding as an individual and as a group using group think strategies and techniques 3.4 Contributing to Resolution of issues and concerns

RANGE OF VARIABLES

VARIABLE	RANGE
1. Role and objective of team	May include: 1.1 Work activities in a team environment with enterprise or specific sector 1.2 Limited discretion, initiative and judgement maybe demonstrated on the job, either individually or in a team environment
2. Sources of information	May include: 2.1 Standard operating and/or other workplace procedures 2.2 Job procedures 2.3 Machine/equipment manufacturer's specificationsand 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	May include: 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	**Assessment requires evidence that the candidate:**
	1.1 Worked 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
2. Resource Implications	**The following resources should be provided:**
	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. Methods of Assessment	**Competency in this unit may be assessed through:**
	3.1 Role play involving the participation of individual memberto the attainment of organizational goal
	3.2 Case studies and scenarios as a basis for discussion of issues and strategies in teamwork
	3.3 Socio-drama and socio-metric methods
	3.4 Sensitivity techniques
	3.5 Written Test
4. Context for Assessment	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 : **SOLVE/ADDRESS GENERAL WORKPLACE PROBLEMS**

UNIT CODE : **400311212**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to apply problem-solving techniques to determine the origin of problems and plan for their resolution. It also includes addressing procedural problems through documentation, and referral.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify routine problems	1.1 Routine **problems or procedural problem** areas are identified. 1.2 Problems to be investigated are defined and determined. 1.3 Current conditions of the problem are identified and documented.	1.1 Current industry hardware and software products and services 1.2 Industry maintenance, service and helpdesk practices, processes and procedures 1.3 Industry standard diagnostic tools 1.4 Malfunctions and resolutions	1.1 Identifying current industry hardware and software products and services 1.2 Identifying current industry maintenance, services and helpdesk practices, processes and procedures. 1.3 Identifying current industry standard diagnostic tools 1.4 Describing common malfunctions and resolutions. 1.5 Determining the root cause of a routine malfunction
2. Look for solutions to routine problems	2.1 Potential solutions to problem are identified. 2.2 Recommendations about possible solutions are developed, **documented**, ranked and presented to	2.1 Current industry hardware and software products and services 2.2 Industry service and helpdesk practices, processes and procedures	2.1 Identifying current industry hardware and software products and services 2.2 Identifying services and helpdesk practices,

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	appropriate person for decision.	2.3 Operating systems 2.4 Industry standard diagnostic tools 2.5 Malfunctions and resolutions. 2.6 Root cause analysis	processes and procedures. 2.3 Identifying operating system 2.4 Identifying current industry standard diagnostic tools 2.5 Describing common malfunctions and resolutions. 2.6 Determining the root cause of a routine malfunction
3. Recommend solutions to problems	3.1 Implementation of solutions are **planned**. 3.2 Evaluation of implemented solutions are planned. 3.3 Recommended solutions are documented and submit to appropriate person for confirmation.	3.1 Standard procedures 3.2 Documentation produce	3.1 Producing documentation that recommends solutions to problems 3.2 Following established procedures

RANGE OF VARIABLES

VARIABLE	RANGE
1. Problems/ProceduralProblem	May include: 1.1 Routine/non – routine processes and quality problems 1.2 Equipment selection, availability and failure 1.3 Teamwork and work allocation problem 1.4 Safety and emergency situations and incidents 1.5 Work-related problems outside of own work area
2. Appropriate person	May include: 2.1 Supervisor or manager 2.2 Peers/work colleagues 2.3 Other members of the organization
3. Document	May include: 3.1 Electronic mail 3.2 Briefing notes 3.3 Written report 3.4 Evaluation report
4. Plan	May include: 4.1 Priority requirements 4.2 Co-ordination and feedback requirements 4.3 Safety requirements 4.4 Risk assessment 4.5 Environmental requirements

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Determined the root cause of a routine problem 1.2 Identified solutions to procedural problems. 1.3 Produced documentation that recommends solutions to problems. 1.4 Followed established procedures. 1.5 Referred unresolved problems to support persons.
2. Resource Implications	2.1 Assessment will require access to a workplace over anextended period, or a suitable method of gathering evidence of operating ability over a range of situations.
3. Methods of Assessment	**Competency in this unit may be assessed through:** 3.1 Case Formulation 3.2 Life Narrative Inquiry 3.3 Standardized test The unit will be assessed in a holistic manner as is practical andmay be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation. Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based onthe actual workplace and will include walk through of the relevant competency components.
4. Context for Assessment	4.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

UNIT OF COMPETENCY : **DEVELOP CAREER AND LIFE DECISIONS**

UNIT CODE : **400311213**

UNIT DESCRIPTOR : This unit covers the knowledge, skills, and attitudes in managing one's emotions, developing reflective practice, and boosting self-confidence and developing self-regulation.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Manage one's emotion	1.1 **Self-management strategies** are identified. 1.2 Skills to work independently and to show initiative, to be conscientious, and persevering in the face of setbacks and frustrations are developed. 1.3 Techniques for effectively handling negative emotions and **unpleasant situation i**n the workplace are examined.	1.1 Self-management strategies that assist in regulating behavior and achieving personal and learning goals (e.g. Nine self-management strategies according to Robert Kelley) 1.2 Enablers and barriers in achieving personal and career goals 1.3 Techniques in handling negative emotions and unpleasant situation in the workplace such as frustration, anger, worry, anxiety, etc.	1.1 Managing properly one's emotions and recognizing situations that cannot be changed and accept them and remain professional 1.2 Developing self-discipline, working independently and showing initiative to achieve personal and career goals 1.3 Showing confidence, and resilience in the face of setbacks and frustrations and other negative emotions and unpleasant situations in the workplace
2. Develop reflective practice	2.1 Personal strengths and achievements, based on self-assessment strategies and teacher feedback are contemplated. 2.2 Progress when seeking and	2.1 Basic SWOT analysis 2.2 Strategies to improve one's attitude in the workplace 2.3 Gibbs' Reflective Cycle/Model (Description,	2.1 Using the basic SWOT analysis as self-assessment strategy 2.2 Developing reflective practice through realization of

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	responding to feedback from teachers to assist them in consolidating strengths, addressing weaknesses and fulfilling their potential are monitored. 2.3 Outcomes of personal and academic challenges by reflecting on previous problem solving and decision making strategies and feedback from peers and teachers are predicted.	Feelings, Evaluation, Analysis, Conclusion, and Action plan)	limitations, likes/ dislikes; through showing of self-confidence 2.3 Demonstrating self-acceptance and being able to accept challenges
3. Boost self-confidence and develop self-regulation	3.1 Efforts for continuous self-improvement are demonstrated. 3.2 Counter-productive tendencies at work are eliminated. 3.3 Positive outlook in life are maintained.	3.1 Four components of self-regulation based on Self-Regulation Theory (SRT) 3.2 Personality development concepts 3.3 Self-help concepts (e. g., 7 Habits by Stephen Covey, transactional analysis, psycho-spiritual concepts)	3.1 Performing effective communication skills – reading, writing, conversing skills 3.2 Showing affective skills – flexibility, adaptability, etc. 3.3 Self-assessment for determining one's strengths and weaknesses

RANGE OF VARIABLES

VARIABLE	RANGE
1. Self-managementstrategies	May include: 1.1 Seeking assistance in the form of job coaching or mentoring 1.2 Continuing dialogue to tackle workplace grievances 1.3 Collective negotiation/bargaining for better working conditions 1.4 Share your goals to improve with a trusted co-worker or supervisor 1.5 Make a negativity log of every instance when you catch yourself complaining to others 1.6 Make lists and schedules for necessary activities
2. Unpleasant situation	May include: 2.1 Job burn-out 2.2 Drug dependence 2.3 Sulking

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Express emotions appropriately 1.2 Work independently and show initiative 1.3 Consistently demonstrate self-confidence and self-discipline
2. Resource Implications	**The following resources should be provided:** 2.1 Access to workplace and resources 2.2 Case studies
3. Methods of Assessment	**Competency in this unit may be assessed through:** 3.1 Demonstration or simulation with oral questioning 3.2 Case problems involving work improvement and sustainability issues 3.3 Third-party report
4. Context for Assessment	4.1 Competency assessment may occur in workplace or any appropriately simulated environment

UNIT OF COMPETENCY **:** **CONTRIBUTE TO WORKPLACE INNOVATION**

UNIT CODE **:** **400311214**

UNIT DESCRIPTOR **:** This unit covers the knowledge, skills and attitudes required to make a pro-active and positive contribution to workplace innovation.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify opportunities to do things better	1.1 **Opportunities for improvement** are identified proactively in own area of work. 1.2 **Information** are gathered and reviewed which may be relevant to ideas and which might assist in gaining support for idea.	1.1 Roles of individuals in suggesting and making improvements. 1.2 Positive impacts and challenges in innovation. 1.3 Types of changes and responsibility. 1.4 Seven habits of highly effective people.	1.1 Identifying opportunities to improve and to do things better. Involvement 1.2 Identifying the positive impacts and the challenges of change and innovation 1.3 Identifying examples of the types of changes that are within and outside own scope of responsibility
2. Discuss and develop ideas with others	2.1 **People who could provide input** to ideas for improvements are identified. 2.2 Ways of approaching people to begin sharing ideas are selected. 2.3 Meeting is set with relevant people. 2.4 Ideas for follow up are review and selected based on feedback. 2.5 **Critical inquiry method** is used to discuss and develop ideas with others.	2.1 Roles of individuals in suggesting and making improvements 2.2 Positive impacts and challenges in innovation 2.3 Types of changes and responsibility. 2.4 Seven habits of highly effective people	2.1 Identifying opportunities to improve and to do things better. Involvement 2.2 Identifying the positive impacts and the challenges of change and innovation 2.3 Providing examples of the types of changes that are within and outside own scope of responsibility 2.4 Communicating ideas for change through small

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
			group discussions and meetings
3. Integrate ideas for change in the workplace	3.1 Critical inquiry method is used to integrate different ideas for change of key people. 3.2 Summarizing, analyzing and generalizing skills are used to extract salient points in the pool of ideas. 3.3 **Reporting skills** are likewise used to communicate results. 3.4 **Current Issues and concerns** on the systems, processes and procedures, as well as the need for simple innovative practices are identified.	3.1 Roles of individuals in suggesting and making improvements 3.2 Positive impacts and challenges in innovation 3.3 Types of changes and responsibility 3.4 Seven habits of highly effective people 3.5 Basic research skills	3.1 Identifying opportunities to improve and to do things better. Involvement 3.2 Identifying the positive impacts and the challenges of change and innovation 3.3 Providing examples of the types of changes that are within and outside own scope of responsibility 3.4 Communicating ideas for change through small group discussions and meetings 3.5 Demonstrating skills in analysis and interpretation of data

RANGE OF VARIABLES

VARIABLE	RANGE
1. Opportunities forimprovement	May include: 1.1 Systems 1.2 Processes 1.3 Procedures 1.4 Protocols 1.5 Codes 1.6 Practices
2. Information	May include: 2.1 Workplace communication problems 2.2 Performance evaluation results 2.3 Team dynamics issues and concerns 2.4 Challenges on return of investment 2.5 New tools, processes and procedures 2.6 New people in the organization
3. People who could provide input	May include: 3.1 Leaders 3.2 Managers 3.3 Specialists 3.4 Associates 3.5 Researchers 3.6 Supervisors 3.7 Staff 3.8 Consultants (external) 3.9 People outside the organization in the same field or similar expertise/industry 3.10 Clients
4. Critical inquiry method	May include: 4.1 Preparation 4.2 Discussion 4.3 Clarification of goals 4.4 Negotiate towards a Win-Win outcome 4.5 Agreement 4.6 Implementation of a course of action 4.7 Effective verbal communication. See our pages: Verbal Communication and Effective Speaking 4.8 Listening 4.9 Reducing misunderstandings is a key part of effective negotiation 4.10 Rapport Building 4.11 Problem Solving 4.12 Decision Making 4.13 Assertiveness 4.14 Dealing with Difficult Situations
5. Reporting skills	May include: 5.1 Data management 5.2 Coding 5.3 Data analysis and interpretation

VARIABLE	RANGE
	5.4 Coherent writing 5.5 Speaking

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Identified opportunities to do things better. 1.2 Discussed and developed ideas with others on how to contribute to workplace innovation. 1.3 Integrated ideas for change in the workplace. 1.4 Analyzed and reported rooms for innovation and learningin the workplace.
2. Resource Implications	**The following resources should be provided:** 2.1 Pens, papers and writing implements 2.2 Cartolina 2.3 Manila papers
3. Methods of Assessment	**Competency in this unit may be assessed through:** 3.1 Psychological and behavioral Interviews 3.2 Performance Evaluation 3.3 Life Narrative Inquiry 3.4 Review of portfolios of evidence and third-party workplace reports of on-the-job performance 3.5 Sensitivity analysis 3.6 Organizational analysis 3.7 Standardized assessment of character strengths and virtues applied
4. Context for Assessment	4.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

UNIT OF COMPETENCY **:** **PRESENT RELEVANT INFORMATION**

UNIT CODE **:** **400311215**

UNIT DESCRIPTOR **:** This unit of covers the knowledge, skills and attitudes required to present data/information appropriately.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Gather data/ information	1.1 Evidence, facts and information are collected. 1.2 Evaluation, terms of reference and conditions are reviewed to determine whether data/information falls within project scope.	1.1 Organisational protocols 1.2 Confidentiality 1.3 Accuracy 1.4 Business mathematics and statistics 1.5 Data analysis techniques/proc edures 1.6 Reporting requirements toa range of audiences 1.7 Legislation, policy and procedures relating to the conduct of evaluations 1.8 Organisational values, ethics and codes of conduct	1.1 Describing organisational protocols relating to clientliaison 1.2 Protecting confidentiality 1.3 Describing accuracy 1.4 Computing business mathematics and statistics 1.5 Describing data analysis techniques/ procedures 1.6 Reporting requirements toa range of audiences 1.7 Stating legislation, policy and procedures relating to the conduct of evaluations 1.8 Stating organisational values, ethics and codes of conduct
2. Assess gathered data/ information	2.1 Validity of data/ information is assessed.	2.1 Business mathematics and statistics	2.1 Computing business mathematics and statistics

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	2.2 Analysis techniques are applied to assess data/ information. 2.3 Trends and anomalies are identified. 2.4 ***Data analysis techniques*** and procedures are documented. 2.52.5 Recommendations are made on areas of possible improvement.	2.2 Data analysis techniques/ procedures 2.3 Reporting requirements toa range of audiences 2.4 Legislation, policy and procedures relating to the conduct of evaluations 2.5 Organisational values, ethics and codes of conduct	2.2 Describing data analysis techniques/ procedures 2.3 Reporting requirements toa range of audiences 2.4 Stating legislation, policy and procedures relating to the conduct of evaluations 2.5 Stating organisational values, ethics and codes of conduct
3. Record and present information	3.1 Studied data/ information are recorded. 3.2 Recommendations are analysed for action to ensure they are compatible with the project's scope and terms of reference. 3.3 Interim and final reports are analysed and outcomes are compared to the criteria established at theoutset. 3.4 Findings are presented to stakeholders.	3.1 Data analysis techniques/ procedures 3.2 Reporting requirements toa range of audiences 3.3 Legislation, policy and procedures relating to the conduct of evaluations 3.4 Organisational values, ethics and codes of conduct	3.1 Describing data analysis techniques/ procedures 3.2 Reporting requirements toa range of audiences 3.3 Stating legislation, policy and procedures relating to the conduct of evaluations 3.4 Stating organisational values, ethics and codes of conduct practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Data analysis techniques	May include: 1.1 Domain analysis 1.2 Content analysis 1.3 Comparison technique

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Determine data / information 1.2 Studied and applied gathered data/information 1.3 Recorded and studied data/information These aspects may be best assessed using a range of scenarios what ifs as a stimulus with a walk through formingpart of the response. These assessment activities should include a range of problems, including new, unusual and improbable situations that may have happened.
2. Resource Implications	**Specific resources for assessment** 2.1 Evidence of competent performance should be obtained by observing an individual in an information managementrole within the workplace or operational or simulated environment.
3. Methods of Assessment	**Competency in this unit may be assessed through:** 3.1 Written Test 3.2 Interview 3.3 Portfolio The unit will be assessed in a holistic manner as is practical andmay be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation. Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based onthe actual workplace and will include walk through of the relevant competency components.
4. Context for Assessment	4.1 In all workplace, it may be appropriate to assess this unit concurrently with relevant teamwork or operation units.

UNIT OF COMPETENCY	:	PRACTICE OCCUPATIONAL SAFETY AND HEALTH POLICIES AND PROCEDURES
UNIT CODE	:	400311216
UNIT DESCRIPTOR	:	This unit covers the knowledge, skills and attitudes required to identify OSH compliance requirements, prepare OSH requirements for compliance, perform tasks in accordance with relevant OSH policies and procedures.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify OSH compliance requirements	1.1 Relevant *OSH requirements, regulations, policies and procedures* are identified in accordance with workplace policies and procedures. 1.2 OSH activity non-conformities are conveyed to *appropriate personnel*. 1.3 *OSH preventive and control requirements* are identified in accordance with OSH work policies and procedures.	1.1 OSH preventive and control requirements 1.2 Hierarchy of Controls 1.3 Hazard Prevention and Control 1.4 General OSH principles 1.5 Work standards and procedures 1.6 Safe handling procedures of tools, equipment and materials 1.7 Standard emergency plan and procedures in the workplace	1.1 Communication skills 1.2 Interpersonal skills 1.3 Critical thinking skills 1.4 Observation skills
2. Prepare OSH requirements for compliance	2.1 OSH work activity material, tools and equipment requirements are identified in accordance with workplace policies and procedures. 2.2 Required OSH materials, tools and equipment are acquired in accordance with workplace policies and procedures.	2.1 Resources necessary to execute hierarchy of controls 2.2 General OSH principles 2.3 Work standards and procedures 2.4 Safe handling procedures of tools, equipment and materials 2.5 Different OSH control measures	2.1 Communication skills 2.2 Estimation skills 2.3 Interpersonal skills 2.4 Critical thinking skills 2.5 Observation skills 2.6 Material, tool and equipment identification skills

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	2.3 Required OSH materials, tools and equipment are arranged/ placed in accordance with OSH work standards.		
3. Perform tasks in accordance with relevant OSH policies and procedures	3.1 Relevant OSH work procedures are identified in accordance with workplace policies and procedures. 3.2 Work Activities are executed in accordance with OSH work standards. 3.3 **Non-compliance work activities** are reported to *appropriate personnel*.	3.1 OSH work standards 3.2 Industry related work activities 3.3 General OSH principles 3.4 OSH Violations Non-compliance work activities	3.1 Communication skills 3.2 Interpersonal skills 3.3 Troubleshooting skills 3.4 Critical thinking skills 3.5 Observation skills

RANGE OF VARIABLES

VARIABLE	RANGE
1. OSH Requirements, Regulations, Policies and Procedures	May include: 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 Permit to Operate 1.6 Philippine Occupational Safety and Health Standards 1.7 Department Order No. 13 (Construction Safety and Health) 1.8 ECC regulations
2. Appropriate Personnel	May include: 2.1 Manager 2.2 Safety Officer 2.3 EHS Offices 2.4 Supervisors 2.5 Team Leaders 2.6 Administrators 2.7 Stakeholders 2.8 Government Official 2.9 Key Personnel 2.10 Specialists 2.11 Himself
3. OSH Preventive and Control Requirements	May include: 3.1 Resources needed for removing hazard effectively 3.2 Resources needed for substitution or replacement 3.3 Resources needed to establishing engineering controls 3.4 Resources needed for enforcing administrative controls 3.5 Personal Protective equipment
4. Non OSH-Compliance Work Activities	May include non-compliance or observance of the following safety measures: 4.1 Violations that may lead to serious physical harm or death 4.2 Fall Protection 4.3 Hazard Communication 4.4 Respiratory Protection 4.5 Power Industrial Trucks 4.6 Lockout/Tag-out 4.7 Working at heights (use of ladder, scaffolding) 4.8 Electrical Wiring Methods 4.9 Machine Guarding 4.10 Electrical General Requirements 4.11 Asbestos work requirements 4.12 Excavations work requirements

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Convey OSH work non-conformities to appropriate personnel 1.2 Identify OSH preventive and control requirements in accordance with OSH work policies and procedures 1.3 Identify OSH work activity material, tools and equipment requirements in accordance with workplace policies and procedures 1.4 Arrange/Place required OSH materials, tools and equipment in accordance with OSH work standards 1.5 Execute work activities in accordance with OSH work standards 1.6 Report OSH activity non-compliance work activities to appropriate personnel
2. Resource Implications	**The following resources should be provided:** 2.1 Facilities, materials tools and equipment necessary for theactivity
3. Methods of Assessment	**Competency in this unit may be assessed through:** 3.1 Observation/Demonstration with oral questioning 3.2 Third party report
4. Context for Assessment	4.1 Competency may be assessed in the work place or in asimulated work place setting

UNIT OF COMPETENCY	:	**EXERCISE EFFICIENT AND EFFECTIVE SUSTAINABLE PRACTICES IN THE WORKPLACE**
UNIT CODE	:	**400311217**
UNIT DESCRIPTOR	:	This unit covers knowledge, skills and attitude to identify the efficiency and effectiveness of resource utilization, determine causes of inefficiency and/or ineffectiveness of resource utilization and Convey inefficient and ineffective environmental practices.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify the efficiency and effectiveness of resource utilization	1.1 Required resource utilization in the workplace is measured using appropriate techniques. 1.2 Data are recorded in accordance with workplace protocol. *1.3* Recorded data are compared to determine the efficiency and effectiveness of resource utilization according to established ***environmental work procedures***.	1.1 Importance of Environmental Literacy 1.2 Environmental Work Procedures 1.3 Waste Minimization 1.4 Efficient Energy Consumptions	1.1 Recording Skills 1.2 Writing Skills 1.3 Innovation Skills
2. Determine causes of inefficiency and/or ineffectiveness of resource utilization	2.1 Potential causes of inefficiency and/or ineffectiveness are listed. 2.2 Causes of inefficiency and/or ineffectiveness are identified through deductive reasoning. 2.3 Identified causes of inefficiency and/or ineffectiveness are validated thru established	2.1 Causes of environmental inefficiencies and ineffective-ness	2.1 Deductive Reasoning Skills 2.2 Critical thinking 2.3 Problem Solving 2.4 Observation Skills

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	environmental procedures.		
3. Convey inefficient and ineffective environmental practices	3.1 Efficiency and effectiveness of resource utilization are reported to *appropriate personnel*. 3.2 Concerns related resource utilization are discussed with appropriate personnel. 3.3 Feedback on information/ concerns raised are clarified with appropriate personnel.	3.1 Appropriate Personnel to address the environmental hazards 3.2 Environmental corrective actions	3.1 Written and Oral Communication Skills 3.2 Critical thinking 3.3 Problem Solving 3.4 Observation Skills 3.5 Practice Environmental Awareness

RANGE OF VARIABLES

VARIABLE	RANGE
1. Environmental Work Procedures	May include: 1.1 Utilization of Energy, Water, Fuel Procedures 1.2 Waster Segregation Procedures 1.3 Waste Disposal and Reuse Procedures 1.4 Waste Collection Procedures 1.5 Usage of Hazardous Materials Procedures 1.6 Chemical Application Procedures 1.7 Labeling Procedures
2. Appropriate Personnel	May include: 2.1 Manager 2.2 Safety Officer 2.3 EHS Offices 2.4 Supervisors 2.5 Team Leaders 2.6 Administrators 2.7 Stakeholders 2.8 Government Official 2.9 Key Personnel 2.10 Specialists 2.11 Himself

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Measured required resource utilization in the workplace using appropriate techniques 1.2 Recorded data in accordance with workplace protocol 1.3 Identified causes of inefficiency and/or ineffectiveness through deductive reasoning 1.4 Validate the identified causes of inefficiency and/or ineffectiveness thru established environmental procedures 1.5 Report efficiency and effectives of resource utilization to appropriate personnel 1.6 Clarify feedback on information/concerns raised with appropriate personnel
2. Resource Implications	**The following resources should be provided:** 2.1 Workplace 2.2 Tools, materials and equipment relevant to the tasks 2.3 PPE 2.4 Manuals and references
3. Methods of Assessment	**Competency in this unit may be assessed through:** 3.1 Demonstration 3.2 Oral questioning 3.3 Written examination
4. Context for Assessment	4.1 Competency assessment may occur in workplace or any appropriately simulated environment 4.2 Assessment shall be observed while task are being undertaken whether individually or in-group

UNIT OF COMPETENCY **:** **PRACTICE ENTREPRENEURIAL SKILLS IN THE WORKPLACE**

UNIT CODE **:** **400311218**

UNIT DESCRIPTOR **:** This unit covers the outcomes required to apply entrepreneurial workplace best practices and implement cost-effective operations.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Apply entrepreneurial workplace best practices	1.1 **Good practices** relating to workplace operations are observed and selected following workplace policy. 1.2 Quality procedures and practices are complied with according to workplace requirements. 1.3 Cost-conscious habits in **resource utilization** are applied based on industry standards.	1.1 Workplace best practices, policies and criteria 1.2 Resource utilization 1.3 Ways in fostering entrepreneurial attitudes: • Patience • Honesty • Quality-consciousness • Safety-consciousness • Resourceful-ness	1.1 Communication skills 1.2 Complying with quality procedures
2. Communicate entrepreneurial workplace best practices	2.1 Observed good practices relating to workplace operations are communicated to **appropriate person**. 2.2 Observed quality procedures and practices are communicated to appropriate person.	2.1 Workplace best practices, policies and criteria 2.2 Resource utilization 2.3 Ways in fostering entrepreneurial attitudes: • Patience • Honesty • Quality-consciousness	2.1 Communication skills 2.2 Complying with quality procedures 2.3 Following workplace communication protocol

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	2.3 Cost-conscious habits in resource utilization are communicated based on industry standards.	• Safety-consciousness • Resourceful-ness	
3. Implement cost-effective operations	3.1 Preservation and optimization of workplace resources is implemented in accordance with enterprise policy. 3.2 Judicious use of workplace tools, equipment and materials are observed according to manual and work requirements. 3.3 Constructive contributions to office operations are made according to enterprise requirements. 3.4 Ability to work within one's allotted time and finances is sustained.	3.1 Optimization of workplace resources 3.2 5S procedures and concepts 3.3 Criteria for cost-effectiveness 3.4 Workplace productivity 3.5 Impact of entrepreneurial mindset to workplace productivity 3.6 Ways in fostering entrepreneurial attitudes: • Quality-consciousness • Safety-consciousness	3.1 Implementing preservation and optimizing workplace resources 3.2 Observing judicious use of workplace tools, equipment and materials 3.3 Making constructive contributions to office operations 3.4 Sustaining ability to work within allotted time and finances

RANGE OF VARIABLES

VARIABLE	RANGE
1. Good practices	May include: 1.1 Economy in use of resources 1.2 Documentation of quality practices
2. Resources utilization	May include: 2.1 Consumption/ use of consumables 2.2 Use/Maintenance of assigned equipment and furniture 2.3 Optimum use of allotted /available time

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Demonstrated ability to identify and sustain cost-effective activities in the workplace 1.2 Demonstrated ability to practice entrepreneurial knowledge, skills and attitudes in the workplace.

2. Resource Implications	**The following resources should be provided:**
	2.1 Simulated or actual workplace
	2.2 Tools, materials and supplies needed to demonstrate the required tasks
	2.3 References and manuals
	    2.3.1 Enterprise procedures manuals
	    2.3.2 Company quality policy

3. Methods of Assessment	**Competency in this unit should be assessed through:** 3.1 Interview 3.2 Third-party report
4. Context for Assessment	4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 Assessment shall be observed while tasks are being undertaken whether individually or in-group

COMMON COMPETENCIES

UNIT OF COMPETENCY **:** **APPLY SAFETY MEASURES IN FARM OPERATIONS**

UNIT CODE **:** **AGR321201**

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

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* 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.	1.1 Different work tasks in farm operations 1.2 Place and time for implementation of safety measures 1.3 Different hazards in the workplace 1.4 Types of tools, materials and outfits 1.5 Preparation of tools, materials and outfits	1.1 Identifying work tasks in farm operations 1.2 Determining place and time for implementation of safety measures 1.3 Reading labels, manuals and other basic safety information 1.4 Identifying effective/ functional tools, materials and outfit 1.5 Preparing tools, materials and outfits 1.6 Discarding defective tools, and materials
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	2.1 Uses and functions of tools 2.2 Outfits and how to wear it 2.3 Expiration/shelf life of materials 2.4 Proper disposal of expired materials	2.1 Using tools and materials in the workplace 2.2 Wearing of outfits 2.3 Observing expiration/shelf life of materials

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	materials are strictly observed. 2.4 ***Emergency procedures*** are known and followed to ensure a safework requirement. 2.5 Hazards in the workplace are identified and reported in line with farm guidelines.	2.5 Environmental rules and regulations 2.6 Emergency procedures 2.7 Hazards identification and reporting 2.8 Communication skills 2.9 OSHS	2.4 Disposing of expired materials 2.5 Following emergency procedures 2.6 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.	3.1 Procedures of cleaning used tools and outfits 3.2 Label and storage unused materials 3.3 Disposal of wastes materials 3.4 Manufacturers' recommendation on keeping materials 3.5 Environmental rules and regulations	3.1 Cleaning used tools and outfit 3.2 Labeling and storing unused materials 3.3 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

1. Critical aspects of Competency	Assessment requires evidence that the candidate:
	1.1 Determined areas of concern for safety measures
	1.2 Applied appropriate safety measures according to industry requirements
	1.3 Prepared tools, materials and outfit needed
	1.4 Performed proper disposal of used materials
	1.5 Cleaned and stored tools, materials and outfit in designated facilities
2. Resource Implications	The following resources should be provided:
	2.1 Farm location
	2.2 Tools, equipment and outfits appropriate in applying safety measures
3. Methods of Assessment	Competency in this unit may be assessed through:
	3.1 Practical demonstration
	3.2 Third Party Report
4. Context for Assessment	4.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

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

UNIT CODE   :   **AGR321202**

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 *Italicized terms* 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.	1.1 Types and uses of farm tools 1.2 Characteristics of functional tools 1.3 Checking tools for defects/faults 1.4 Segregation and reporting defective tools 1.5 Uses of tools	1.1 Identifying farm tools for the work 1.2 Checking the conditions of tools 1.3 Reporting defective tools 1.4 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 is used according to its function. 2.6 Safety procedures are followed.	2.1 Types and operations of farm equipment 2.2 Standards operating procedures of farm equipment 2.3 Instructional manual of equipment 2.4 Pre-operation check-up 2.5 Equipment Specification 2.6 Procedures in calibrating and use of equipment 2.7 Equipment faults identification and reporting 2.8 Operation of equipment	2.1 Identifying appropriate farm equipment for the work 2.2 Reading instructional manual 2.3 Conducting pre-operation check-up 2.4 Identifying faults/defects of farm equipment 2.5 Reporting on defective farm equipment 2.6 Operating farm equipment 2.7 Following safety procedures

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		2.9 Codes and Regulations on environmental protection 2.10 Safety and keeping of equipment every after use 2.11 Safety measures	
3. Perform preventive maintenance	3.1 Tools and equipment are cleaned immediately after use in line with farm procedures. 3.2 Routine check-up and maintenance are performed. 3.3 Tools and equipment are stored in designated areas in line with farm procedures.	3.1 Cleaning procedures of tools and equipment 3.2 Maintenance procedures of farm equipment 3.3 Storage of tools and equipment 3.4 Designated storage areas	3.1 Cleaning tools and equipment 3.2 Performing routinely check-up of tools and equipment 3.3 Maintaining farm equipment 3.4 Storing tools and equipment

RANGE OF VARIABLES

VARIABLE	RANGE
1. Farm equipment	May include: 1.1 Engine 1.2 Pumps 1.3 Generators 1.4 Sprayers
2. Farm tools	May include: 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	May include: 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. Resource Implications	The following resources should be provided: 2.1 Service/operational manual of farm tools and equipment 2.2 Tools and equipment 2.3 Farm implements
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Direct observation 3.2 Practical demonstration 3.3 Third Party Report
4. Context for Assessment	4.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

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

UNIT CODE : **AGR321203**

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

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* 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.	1.1 Job requirements/ labor needs 1.2 Calculation of quantities of materials and resources required 1.3 Calculation of time for job completion 1.4 Preparation of estimate report 1.5 Basic mathematical operations 1.6 Percentage and ratios 1.7 Unit Conversion	1.1 Identifying job requirements/labor 1.2 Estimating quantities of materials and resources required 1.3 Estimating timefor job completion 1.4 Performing basic calculation 1.5 Compute percentage 1.6 Convert Englishto metric systems of measurement 1.7 Preparing estimate report

2. Perform basic workplace calculation	1.1 **System and units of measurement** to be followed are ascertained. 1.2 Calculation needed to complete work tasks are performed using the **four basic mathematical operation**. 1.3 Calculate whole fraction, percentage and mixed when are used to complete the instructions.	2.1 Four basic mathematical operation 2.2 System and units of measurement 2.3 Fraction, percentage and ratio 2.4 Material take-off 2.5 Materials costing	2.1 Compute bill of materials 2.2 Compute projectcost

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	1.4 Number computed is checked following work requirements		

RANGE OF VARIABLES

VARIABLE	RANGE
1. Four basic mathematical operation	Includes: 1.1 Addition 1.2 Subtraction 1.3 Multiplication 1.4 Division
2. System of measurement	Includes: 2.1 English 2.2 Metric
3. Units of measurement	Includes: 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. Resource Implications	The following resources should be provided: 2.1 Relevant tools and equipment for basic calculation 2.2 Recommended data
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Practical demonstration 3.2 Written examination
4. Context for Assessment	4.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

UNIT OF COMPETENCY	:	PERFORM NURSERY OPERATIONS
UNIT CODE	:	XXXX
UNIT DESCRIPTOR	:	This unit covers the skills, knowledge and attitude required to perform nursery operation. It includes selecting site for nursery operations, identify and prepare tools, supplies and materials, perform seed sowing, maintain plant nursery and perform plant cacao propagation.

ELEMENTS	PERFORMANCE CRITERIA (*Italicized terms* are elaborated in the Range of Variables)	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Select site for nursery operations	1.1. **Nursery requirements** is identified prior to selection and inspection of farm site. 1.2. Nursery layout is organized in accordance with Good Agricultural practices (GAP). 1.3. OHS and use of PPE is applied according to work requirements. 1.4. Follow waste management procedures based on Environmental health and safety standards (EHS). 1.5. Tools, equipment and materials is identified based on work requirements.	1.1. Site Selection 1.2. Site inspection 1.3. Site measurement 1.4. Nursery requirements Good Agricultural practices (GAP) 1.5. OHS 1.6. PPE 1.7. Tools, equipment and materials for nursery operations	1.1. Identify nursery design 1.2. Perform nursery lay-outing
2. Identify and prepare nursery tools, supplies, materials and equipment	2.1. **Tools, materials, supplies and equipment** are identified per work requirements and OHS. 2.2. Familiarize with the use of equipment, tools and materials as per manual of operations. 2.3. Appropriate **Personal Protective Equipment (PPE)** are identified based on industry requirements. 2.4. Appropriate **growing media** is selected for cacao seed	2.1. Proper use of tools and equipment 2.2. OHS 2.3. PPE 2.4. Growing media	2.1. Identify tools and equipment 2.2. Perform proper handling of tools and equipment

	germination. 2.5. Proper housekeeping of tools, equipment and materials are maintained as per manual of operations.		
3. Seed sowing (seeding preparation)	3.1. Disinfection is performed prior to seed germination activity. 3.2. Germinated seeds are selected and sown properly based on standards procedures. 3.3. Proper *Seed germination method* is conducted using appropriate standard procedures.	3.1. Sexual propagation 3.2. Types of Cacao Beans 3.3. Seed germination method 3.4. Seed sowing	3.1. Germinate seed 3.2. Perform seed sowing
4.Preparation of seedling materials	4.1. Growing media is identified based in the industry requirement. 4.2. Growing media is mixed based on recommended formula/ratio. 4.3. Perform solarization of selected potting media as per standard practices 4.4. Tools, materials and equipment are identified based on work requirement	4.1. Mixture of growing media 4.2. Calculation/ ratio and proportion of growing media 4.3. Tools, equipment and materials for growing media 4.4. Good Agricultural practices (GAP) 4.5. OHS	4.1. Calculation/ ratio and proportion of growing media 4.2. Preparation of growing media 4.3. Perform solorization of growing media 4.4. Perform bagging
5. Maintain nursery facilities	5.1. *Cultural practices* are applied in order to maintain the nursery facilities. 5.2. Suitable *preventive and corrective measures* are applied as per farm requirement. 5.3. Remove stunted seedlings in accordance to industry standards.	5.1. Nursery management 5.2. Cacao Cultural practices 5.3. Integrated pest management (IPM) 5.4. Good Agricultural practices (GAP) 5.5. OHS 5.6. PPE	5.1. Practice proper nursery management ● Perform manual weeding ● Perform IPM control measures ● Perform watering ● Culled stunted seedlings
6. Perform cacao propagation	6.1. Determine the seedling stage for grafting in accordance to the physiological stages	6.1. Stages of Cacao Seedling 6.2. Grafting techniques	6.1. Perform grafting 6.2. Demonstrate caring of clones

	of the plants. 6.2. Characteristics of good scion is identified based on the industry standard. 6.3. ***Variety of scion*** is selected based on compatibility 6.4. Apply appropriate ***grafting techniques*** based on industry standard. 6.5. Identify all grafting materials and sanitize grafting tools in accordance to OHS 6.6. Follow procedures in care and handling of clones based on good agricultural management (GAP).	6.3. Grafting tools and materials 6.4. Factors affecting grafted seedlings 6.5. Care for Cacao Clones 6.6. Care of scion 6.7. GAP	

RANGE OF VARIABLES

VARIABLE	RANGE
1. Nursery requirements	1.1. Access road 1.2. Water and electricity source 1.3. Topography
2. Tools, supplies, materials and equipment	2.1. Bolo 2.2. Spade/Shovel 2.3. Garden Hoe 2.4. Pail and Dipper 2.5. Rake 2.6. Grafting knife 2.7. Grafting tape 2.8. Measuring equipment 2.9. Grass cutter 2.10. Poly-ethylene bag
3. Personal Protective Equipment (PPE)	3.1. Boots 3.2. Gloves 3.3. Safety glasses 3.4. Long sleeves 3.5. Native hat
4. Growing Media	4.1. Soil 4.2. Carbonized Rice Hull 4.3. Vermicast 4.4. Dried Manure 4.5. Compost 4.6. Sand
5. Seed Germination Method	5.1. Ragdoll Method 5.2. Seed Testing using seedbox
6. Cultural Practices (Nursery)	6.1. Weed control (Manual) 6.2. Foot bath application 6.3. Shading
7. Preventive and corrective method	7.1. Preventive: ● Monitoring ● Cleaning and sanitation 7.2. Corrective: ● Repairing ● Treatment
8. Variety of scion	8.1. Criollo 8.2. Forastero 8.3. Trinitario
9. Grafting Techniques	9.1. Side grafting 9.2. Cleft grafting

EVIDENCE GUIDE

1. Critical Aspect of Competency	Assessment requires evidence that the candidate:
	 1.1 Select site for nursery operation.
	      1.1.1. Identify appropriate nursery design.
	      1.1.2. Perform nursery lay-outing.
	 1.2 Identify and prepare nursery tools, supplies, materials and equipment
	      1.2.1. Identify tools and equipment
	      1.2.2. Perform proper handling of tools and equipment
	 1.3 Seed sowing.
	      1.3.1. Germinate seeds
	      1.3.2. Perform seed sowing
	 1.4 Preparation of seedling materials
	      1.4.1. Preparation of growing media.
	      1.4.2. Perform bagging
	 1.5 Maintain nursery facilities
	      1.5.1. Perform maintenance of cacao seedlings
	 1.6 Perform cacao propagation
	      1.6.1. Select appropriate scion
	      1.6.1. Perform grafting

2. Resource Implications	The following resources should be provided: 2.1 Actual workplace 2.2 Materials, tools, and equipment needed to perform the required task 2.3 References and manuals 2.4 PPEs 2.5 First aid kit
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Demonstration 3.2 Oral questioning 3.3 Written test
4. Context of Assessment	Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center in a simulated workplace setting

UNIT OF COMPETENCY : **PLANT CACAO CROPS**

UNIT CODE : **XXXX**

UNIT DESCRIPTOR : This unit covers the skills, knowledge and attitude required to.plant cacao crops. It includes site selection for planting, land preparation and plant cacao seedling.

ELEMENTS	PERFORMANCE CRITERIA (*Italicized terms* are elaborated in the Range of Variables)	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Select site for planting	1.1. **Suitable site** is selected and inspected based on planting requirements. 1.2. Farm layout is organized in accordance with Good Agricultural Practices (GAP). 1.3. **Tools, equipment and materials** for lay-outing are identified based on work requirements. 1.4. OHS and use of PPE is applied according to work requirements. 1.5. **Records** are kept and maintain following the industry standard. 1.6. Follow waste management procedures based on Environmental health and safety standards (EHS).	1.1. Planting requirements 1.2. Zonal Law (LGU) 1.3. Philippine National Standards (PNS/BAFPS 104:2011) 1.4. Good Agricultural practices (GAP 1.5. OHS 1.6. PPE 1.7. Tools, materials and equipment 1.8. Plantation layout 1.9. Record keeping	1.1. Design farm layout 1.2. Record keeping 1.3. Select site
2. Perform land preparation	2.1. Identify **soil requirements** for plantation based the cacao planting requirements. 2.2. Conduct **soil sampling** for soil analysis following the industry standard. 2.3. **Tools, equipment and materials** are identified based on land preparation requirements. 2.4. Appropriate **land preparation methods**	2.1. Soil Sampling 2.2. Land Preparation 2.3. Tools and equipment in land preparation 2.4. Good Agricultural practices (GAP) 2.5. OHS 2.6. PPE	2.1. Perform soil sampling 2.2. Perform Land Preparation 2.4. Perform cleaning tools and equipment

	are applied in accordance to standard operating procedures.		
3. Plant cacao seedling	3.1. Appropriate tools, materials and equipment are use in accordance to the industry requirement. 3.2. *Quality seedlings* are selected based on the physiological stages of plants. 3.3. *Cropping systems* are applied in accordance to planting requirements. 3.4. Determine the compatability of cacao crops to other existing crops based recommended standard. 3.5. Determine *types of fertilizer* and its application according to cacao fertilizer requirement. 3.6. Staking and plant support are installed following Good Agricultural Practices (GAP). 3.7. Follow recommended cropping calendar in accordance to required plant requirements.	3.1. Tools and equipment in planting seedlings 3.2 Quality of seedling 3.3. Cropping System 3.4. Types of fertilizer 3.5. Climatic Type/Conditions	3.1. Select appropriate cropping system 3.2. Apply appropriate planting method 3.3. Select appropriate planting system 3.4. Apply fertilizer

RANGE OF VARIABLES

VARIABLE	RANGE
1. Suitable site	1.1. Access road 1.2. Water and electricity source 1.3. Topography 1.4. Type of soil
2. Tools, materials and equipment	2.1. Bolo 2.2. Spade/Shovel 2.3. Garden Hoe 2.4. Pail and Dipper 2.5. Measuring tape 2.6. Cacao seedlings 2.7. Soil auger 2.8. Hole digger 2.9. Grass cutter 2.10. Stake
3. Records	3.1. Inventory 3.2. Activity report 3.3. Financial records 3.4. Accidental report
4. Soil Requirements	4.1. Soil Texture 4.2. Soil pH 4.3. Soil Moisture 4.4. Availability of nutrients
5. Soil sampling	5.1. Stratified 5.2. Randomized
6. Land preparation method	6.1. Zero tillage 6.2. Primary tillage 6.3. Secondary tillage
7. Quality Seedling	7.1. Size 7.2. Number leaves 7.3. Height 7.4. Age 7.5. Disease-free
8. Cropping system	8.1. Mono-cropping 8.2. Inter-croping 8.3. Multi-cropping
9. Types of fertilizer	9.1. Urea 9.2. Complete 9.3. Muriate of potash 9.4. Organic fertilizer

EVIDENCE GUIDE

1.	Critical Aspect of Competency	Assessment requires evidence that the candidate:
		1.1 Select site for planting.
		      1.1.1. Design farm lay-out
		      1.1.2. Perform record keeping
		1.2 Perform land preparation. 1
		      1.2.1. Perform soil sampling
		      1.2.2. Perform land preparation
		1.3 Plant cacao seedling.
		      1.3.1. Select appropriate cropping system
		      1.3.2. Apply appropriate planting method
		      1.3.3. Select and perform appropriate planting system
		      1.3.4. Apply fertilizer

2.	Resource Implications	The following resources should be provided: 2.1 Actual workplace 2.2 Materials, tools, and equipment needed to perform the required task 2.3 References and manuals 2.4 PPEs 2.5 First aid kit
3.	Methods of Assessment	Competency in this unit may be assessed through: 3.1 Demonstration 3.2 Oral questioning 3.3 Written test
4.	Context of Assessment	Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center in a simulated workplace setting

UNIT OF COMPETENCY   **:**   **CARE AND MAINTAIN CACAO PLANTS**

UNIT CODE   **:**   **XXXX**

UNIT DESCRIPTOR   :   This unit covers the skills, knowledge and attitude required to care and maintain cacao plants. It includes perform weeding activities, apply fertilizer, water cacao plants, perform pruning, manage insect pest and disease and perform physical growth-enhancing practices.

ELEMENTS	PERFORMANCE CRITERIA (*Italicized terms* are elaborated in the Range of Variables)	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Perform weeding	1.1. ***Tools, supplies and materials*** for weeding are prepared based on industry standard. 1.2. ***Appropriate Personal Protective Equipment (PPE)*** is used based on the standard. 1.3. ***Types of weeds*** are identified in accordance to the enterprise standard. 1.4. Weed infestation is assessed based on farm protocol. 1.5. Apply appropriate ***weeding method*** based on Good Agricultural Practices (GAP). 1.6. Waste disposal management is perform according to the OHS standard.	1.1. Use of tools, supplies and materials 1.2. Types of weeds 1.3. Integrated weed management (IWN) 1.4. OHS 1.5. GAP	1.1. Proper handling of tools, supplies and materials 1.2. Weeds identification and assessment 1.3. Perform weeding 1.4. Perform proper waste management
2. Apply fertilizer	2.1. Plant parts analysis is performed prior to fertilizer application 2.2. Nutrient deficiency symptoms is identified based on the industry practices. 2.3. Frequency and amount of fertilizer application is based on physiological stages of the plants. 2.4. Different ***methods of fertilizer application***	2.1. Understand the importance of fertilizer 2.2. Different nutrients required by plants. 2.3. Plant nutrient deficiency symptoms 2.3. Different types of inorganic and organic fertilizers. 2.4. OHS 2.5. GAP	2.1. Handling and storage of fertilizers 2.2. Fertilizer computation 2.3. Methods of fertilizer application

	is performed based on standard. 2.5. Fertilizer application is applied following Good Agricultural Practices (GAP). 2.6. Safety practices are applied following Occupational Safety and Health Standards (OSHS).		
3. Water cacao plants	3.1. Water requirement is determine based on the existing weather condition. 3.2. Source of water is identified in accordance to industry standard. 3.3. **Watering methods** are identified based on the cacao plant requirement. 3.4. Watering of plants is performed based on industry standard	3.1.Topography 3.2.Types of irrigation methods 3.3. Types of climate 3.4. Water quality	3.1. Perform watering of plants
4. Perform pruning	4.1. **Tools, supplies and materials** for pruning are prepared based on industry standard. 4.2. Assessing cacao plants for pruning is based on physiological stages of plants. 4.3. Pruning activity is done in accordance to enterprise standard. 4.5. Apply wax/paint on the parent branches according to industry work requirement.	4.1. Characteristics of plants for pruning. 4.2. Systematic way of pruning	4.1. Assess cacao plant for pruning 4.2. Perform proper pruning 4.3. Proper waste disposal
5. Control Pest and Diseases	5.1. **Common insect pests and diseases** of cacao trees is identified based on standard. 5.2. Assess insect pests and diseases based on the physiological stages of cacao trees. 5.3. **Beneficial insects** is identified and assessed based on the industry standard. 5.4. Tools, materials and	5.1. Identify beneficial insect, harmful insect and diseases. 5.2. Different physiological stages of cacao plants 5.3. Calendar of activities for pest and disease management 5.4. Integrated	5.1. Perform Pest and diseases identification 5.2. Basic mathematical computation 5.3. Proper use of tools, materials. 5.4. Perform suitable IPM methods 5.5. Perform waste disposal

	supplies is prepared prior to pest and disease control. 5.5. ***Integrated Pest Management (IPM)*** is practiced based on the Good Agricultural Practices (GAP). 5.6. Use of Personal Protective Equipment (PPE) is required in accordance to the industry standard. 5.7. Standards (OSHS)Safety practices are applied following Occupational Safety and Health Standard 5.8. Farm waste disposal and management is performed based on the manufacturer's manual and DENR protocol.	Pest and Management (IPM) 5.5. OSHS 5.6. PPE 5.7. GAP	
6. Perform physical growth-enhancing practices	6.1 Side grafting is performed in order to rejuvenate old cacao trees. 6.2. Anti-stress foliar application is administered based on farm practice. 6.3. Staking of cacao plants is performed in accordance to industry standard. 6.4. Affected branches are removed in accordance to the industry practice. 6.5.Sleeving of cherelle is performed in accordance to the industry practice.	6.1. Knowledge on side grafting 6.2. Different types of anti-stress foliar 6.3. Basic mathematical computation	6.1. Perform side grafting 6.2. Apply anti-stress foliar 6.3. Perform staking 6.4. Perform sleeving

RANGE OF VARIABLES

VARIABLE	RANGE
1. Tools, supplies and materials	Grass cutter Bolo/scythe Sharpening stone Rake Hedge shear Knapsack sprayer Weed killer (herbicides) Pail Hose Sprinkler Water pump Dipper Soil Moisture Meter Pruning shear Pruning pole Ladder Disinfectant Wax/Paint
2. Personal Protective Equipment (PPE)	9.3. Boots 9.4. Gloves 9.5. Safety glasses 9.6. Long sleeves 9.7. Apron 9.8. Native hat 9.9. Respirator mask
3. Types of weeds	9.10. Broadleaves 9.11. Sedges 9.12. Grasses
4. Weeding method	9.13. Manual 9.14. Mechanical 9.15. Chemical
5. Methods of fertilizer application	9.16. Basal method: ● Ring method ● Side dressing ● Drenching ● Broadcasting 9.17. Foliar method 9.18. Fertigation
6. Watering methods	9.19. Drip irrigation 9.20. Furrow irrigation 9.21. Manual irrigation
7. Common insect	9.22. Pests:

VARIABLE	RANGE
pests and diseases	- Mirids or capsids - cacao pod borer - Ambrosia beetle - Mealy bug - Chafer beetle - Tussok moth - Stem borer 9.23. Diseases: - Vascular streak dieback - Cacao pod rot - Stem canker - Root rot disease - Ceratocystic wilt
8. Beneficial insects	9.24. Midges 9.25. Arachnids 9.26. Ants
9. Integrated Pest Management	9.27. Cultural Method 9.28. Mechanical Method 9.29. Biological Method 9.30. Physical Method 9.31. Chemical Method

EVIDENCE GUIDE

1.	Critical Aspect of Competency	Assessment requires evidence that the candidate:
		1.1 Perform weeding.
		1.1.1. Assess weed infestation
		1.1.2. Use proper tools and equipment for weeding
		1.1.3. Perform weeding
		1.1.4. Perform post-weeding activity
		1.2 Apply Fertilizer.
		1.2.1. Identify fertilizer
		1.2.2. Fertilizer computation
		1.2.3. Apply fertilizer
		1.2.4. Perform proper handling and storage of fertilizer
		1.3 Water cacao.
		1.3.1. Assess water requirements of cacao plants.
		1.3.2. Select appropriate watering device
		1.3.3. Perform watering
		1.3.4. Perform post-watering activity
		1.4 Perform pruning
		1.4.1. Assess plants for pruning.
		1.4.2. Apply OHS
		1.4.3. Use appropriate tools for pruning
		1.4.4. Perform pruning
		1.4.5. Perform proper waste disposal
		1.5 Insect pest and disease management
		1.5.1. Identify beneficial insect, harmful insect and diseases.
		1.5.2. Assess insect pest and disease of cacao plants
		1.5.3. Select appropriate IPM method
		1.5.4. Apply OHS
		1.6 Perform physical growth-enhancing practices
		1.6.1. Select cacao trees for physical growth-enhancing activity
		1.6.2. Apply appropriate management practices for growth-enhancing of plants
2.	Resource Implications	The following resources should be provided:
		2.1 Actual and simulated workplace
		2.2 Materials, tools, and equipment needed to perform the required task
		2.3 References and manuals
		2.4 PPEs
		2.5 First aid kit
3.	Methods of Assessment	Competency in this unit may be assessed through:
		3.1 Demonstration
		3.2 Oral questioning
		3.3 Written test
4.	Context of Assessment	Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center in a simulated workplace setting

UNIT OF COMPETENCY : **CARRY-OUT HARVEST AND POST HARVEST OPERATION**

UNIT CODE : **XXXX**

UNIT DESCRIPTOR : This unit covers the skills, knowledge and attitude required to carry-out harvest and post-harvest operation. It includes pre-harvest operation, perform harvesting operation and perform post-harvest activity.

ELEMENTS	PERFORMANCE CRITERIA (*Italicized terms* are elaborated in the Range of Variables)	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Perform pre-harvest operation	1.1. **Tools, supplies and materials** for harvesting are prepared based on industry standard. 1.2. Disinfect harvesting tools in accordance to the industry standard. 1.3. Perform ocular site inspection based on industry standard.	1.1. Tools, supplies and materials for harvesting 1.2. Different disinfecting agents	1.1. Prepare tools, supplies and materials 1.2. Perform disinfection of tools 1.3. Perform ocular inspection 1.4. Prepare disinfecting solution
2. Perform harvesting activity	2.1. **Maturity indices** of cacao pods are identified prior to selection for harvesting. 2.2. Perform harvesting based on schedule. 2.3. Proper harvesting procedure is followed based on the industry standard. 2.4. Occupational Safety and Health Standards (OSHS) practices are Applied. 2.5. Appropriate **Personal Protective Equipment (PPE)** is use based on the industry protocol 2.6. Harvested pods are placed in appropriate container following the Good Agricultural Practices (GAP).	2.1. Knowledge on Maturity Indices 2.2. Procedure in proper harvesting 2.3. OHS 2.4. Use of PPE 2.5. GAP on harvesting cacao pods	2.1. Select cacao pods for harvesting 2.2. Perform harvesting 2.3. Perform proper handling of harvested pods
3. Perform post-harvest operation	3.1. Harvested pods are transported based in Good Agricultural Practices (GAP).	3.1. Appropriate transporting equipment 3.2. Knowledge on	3.1. Transport harvested pods 3.2. Perform quality selection of

	3.2. ***Quality selection of pods*** is performed based in industry standard. 3.3. Pods are stored in an appropriate condition following the Good Agricultural Practices (GAP). 3.4. Record keeping is performed in accordance to industry requirement. 3.5. Post-sanitation of harvesting tools and storage is perform following the industry standard 3.6. Perform waste disposal management based on farm practice.	basic quality selection 3.3. GAP on post-harvest operation 3.4. Procedure on post-sanitation of tools	pods 3.3. Perform record keeping 3.4. Perform storage of tools 3.5. Perform waste disposal

RANGE OF VARIABLES

VARIABLE	RANGE
1. Tools, supplies and materials	1.1. Pruning Shear 1.2. Fruit crates 1.3. Sack/Jut Sack 1.4. Ladder 1.5. Sorting Table 1.6. Wheel Barrow 1.7. Weighing scale
2. Personal Protective Equipment (PPE)	2.1. Boots 2.2. Gloves 2.3. Safety glasses 2.4. Long sleeves 2.5. Native hat
3. Maturity Indices	3.1. Color of the pods 3.2. Age of pods 3.3. Hollow-sound
4. Quality of pods	4.1. Diseased 4.2. Damaged 4.3. Good

EVIDENCE GUIDE

1. Critical Aspect of Competency	Assessment requires evidence that the candidate:
	 1.1 . Perform pre-harvest operations
	    1.1.1. Prepare tools, supplies and materials for harvesting
	    1.1.2. Perform disinfection
	    1.1.3. Perform ocular site inspection
	 1.2 . Perform harvesting activity
	    1.2.1. Identify maturity indices
	    1.2.2. Perform proper harvesting
	 1.3 . Perform post-harvest operations
	    1.3.1. Identify quality harvested pods
	    1.3.2. Perform record keeping
	    1.3.3. Perform proper waste disposal

2. Resource Implications	The following resources should be provided: 2.1 Actual workplace 2.2 Materials, tools, and equipment needed to perform the required task 2.3 References and manuals 2.4 PPEs 2.5 First aid kit
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Demonstration 3.2 Oral questioning 3.3 Written test
4. Context of Assessment	Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center in a simulated workplace setting

TRAINING DELIVERY

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

- o The training is based on curriculum developed from the competency standards;
- o Learning is modular in its structure;
- o Training delivery is learner-centered and should accommodate individualized and self-paced learning strategies;
- o Training is based on work that must be performed;
- o Training materials are directly related to the competency standards and the curriculum modules;
- o Assessment is based in the collection of evidence of the performance of work to the industry required standard;
- o Training program allows for recognition of prior learning (RPL) or current competencies;
- o Training allows for multiple entry and exit; and
- o Training programs are registered with UTPRAS.

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

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

TRAINING STANDARDS

These guidelines are set to provide the Technical and Vocational Education and Training (TVET) providers with information and other important requirements to consider when designing training programs for **CACAO PRODUCTION LEVEL II.**

CURRICULUM DESIGN

Course Title: **CACAO PRODUCTION LEVEL II**

Nominal Training Duration:

37 hrs – Basic Competencies
24 hrs – Common Competencies
179 hrs – Core Competencies
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240 hrs – Sub-Total
240 hrs - Supervised Industry Learning
_____
480 hrs - Grand Total

Course Description:

The **CACAO PRODUCTION LEVEL II** Qualification consists of competencies that a person must have in order to perform basic nursery operation for cacao seedlings, plant cacao seedlings, grow and maintain cacao plants, carry-out harvest and post-harvest activities, Competencies focus on production, that is from seedlings to harvesting of the cacao pods. It also comprises of competencies to handle farm operation in small scale, which is farm (1 to 5 hectares).

TRAINEE ENTRY REQUIREMENTS

Trainees or students wishing to enroll in this course should possess the following requirements:

- Able to read and write;
- With good moral character;
- Able to communicate, both orally and in writing; and
- Physically fit and mentally healthy as certified by a Public Health Officer

LIST OF TOOLS, EQUIPMENT AND MATERIALS

CACAO PRODUCTION LEVEL II

Recommended list of tools, equipment and materials for the training of 25 trainees for Cacao Production NC II.

TOOLS		EQUIPMENT		MATERIALS	
QTY.		QTY		QTY.	
10 pcs.	Budding knife	5 units	Soil moisture and pH meter	1 pack	Plastic 1.5 x 10 inches
10 pcs.	Bolo	2 units	Wheel barrow	10 pcs.	Jute sacks
2 pcs.	Basin	2 units	Knapsack sprayer	500 pcs.	PE bag with different sizes
5 pcs.	Broomstick	2 units	Hand sprayer	5 sacks	Growing media (50 kg.)

TOOLS		EQUIPMENT		MATERIALS	
QTY.		QTY		QTY.	
5 pcs.	Pail-16Li.	1 unit	Power sprayer	1 bot.	Rooting hormone
5 pcs	Dipper	1 unit	Grass cutter	10 kilos	Fertilizers
. 5 pcs	Pruning saw	3 units	Overhead sprinkler (optional)	2 bottles	Foliar
10 pcs.	Pruning shears	1 unit	LCD projector	1 bot.	Insecticides
5 pcs.	Steel bar	1 unit	Desktop computer/laptop	1 bot	Fungicides
5 pcs.	Pick mattock	1 unit	Printer	10 pcs.	Grafting tape
5 pcs.	Hole digger	1 unit	Soil Auger	5 units	Seed box
5 pcs.	Garden hoe	25 units	PPE	100 pcs.	Cacao seeds
5 pcs.	Shovel	25 pcs.	Hard Hat	100 pcs.	Cacao Seedlings
10 pcs	Plastic crates				
5 pcs.	Harvesting pole			100 ml	Disinfectant
1 pcs.	Ladder			300 pcs.	Bamboo stick 4cmx150cm
10 pcs.	Hand trowel			1 liter	Wax or paint
5 pcs.	Sprinklers			10 pcs.	Paint brush #2
3 pcs.	Rake			2 pc.	Measuring tape (30 m)
				5 pcs.	Sharpening stone
				1 box	Clips
				10 pcs.	Calculator
				1 ream	Bond paper
				5 pcs.	Permanent marker
				2 pcs.	Board marker
				1 unit	White board
				1 pc.	Eraser
				1 unit	Puncher
				1 set	First aid supplies
				1 roll	Plastic Straw

TRAINING FACILITIES

CACAO PRODUCTION LEVEL II
Based on a class size of 25 students/trainees.

SPACE REQUIREMENT	SIZE IN METERS	TOTAL AREA IN SQ. METERS	GRAND TOTAL AREA IN SQ. METERS
A. Building (permanent)			
Learning Resource Center/ Library Area	6 x 10	60 sq.m.	
Lecture Area	6 x 10	60 sq. m	

Laboratory/Trainee Practice Working Area	10 x 10	100 sq.m.	
• Storage area	2 x 5	10 sq. m.	
• Wash area / Comfort Room (Male &Female)	2 x 5	10 sq. m.	
		Sub Total	240 sq. m.
B. Demo Farm			
Nursery area/ Working shed	10 x 12	120 sq. m.	
Field plot/ Plantation Area	100 x 100	1,000 sq. m	
		Sub Total.	1,120 sq. m
GRAND TOTAL			**1,360 sq. m.**

TRAINER'S QUALIFICATIONS FOR AGRICULTURE SECTOR

Trainers who will deliver the training on **CACAO CROPS PRODUCTION LEVEL II** should have the following :

- Must have at least two (2) years industry experience relevant to cacao production within the last five (5) years
- Must have training of trainers certificate OR must be a practicing trainers for 2 years within the last 5 years
- Must be a NC II holder of any related qualification under Agri-Fishery Sector
- *Must be a holder of Trainers Methodology Level 1 or Community-Based Trainers Methodology*

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.

* For TTIs that will register under UTPRAS.