COMPETENCY STANDARDS

COCONUT SUGAR PROCESSING LEVEL II

PROCESSED FOODS & BEVERAGES SECTOR

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
East Service Road, South Luzon Expressway (SLEX), 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 Competency Standards (CS) serve as basis for the:

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

Each CS has 3 sections:

Section 1 **Definition of Competency Standards** - refers to the group of competencies that describes the different functions of the qualification.

Section 2 **The Competency Standards** - gives the specifications of competencies required for effective work performance.

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COMPETENCY STANDARDS FOR COCONUT SUGAR PROCESSING LEVEL II

SECTION 1 COMPETENCY STANDARDS DESCRIPTION

COCONUT SUGAR PROCESSING LEVEL II COMPETENCY STANDARDS

The **COCONUT SUGAR PROCESSING LEVEL II** competency standards consists of competencies that a person must have to process to process coconut sugar from selection of the appropriate materials, harvesting of coconut sap, produce coconut sugar, and storage and packaging. The person must also have competencies in practicing Food Safety Act 2013, cGMP, HACCP, OSHS and 7S of Good Housekeeping, including following relevant environmental rules and regulations.

It also includes competencies of a person in the production line of coconut sugar processing responsible doing routinary works such as inspection of simple defects of packing materials, seal integrity and correct product label. It also comprises the calibrating, assembling and operating of basic food processing tools and equipment such as stove, dehydrator, hammer mill or pulverizer.

The Units of Competency comprising this Competency Standards include the following:

Code	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	COMMON COMPETENCIES
PFB751210	Apply food safety and sanitation
PFB751211	Use standard measuring devices/instruments
PFB751212	Use food processing tools, equipment and utensils
PFB751213	Perform mathematical computation
PFB751214	Implement Good Manufacturing Practice (GMP) procedure
PFB751215	Implement environmental policies and procedures

Code	CORE COMPETENCIES
ABPFB06030296121301	Collect coconut sap
ABPFB06030296121302	Process coconut sap to coconut sugar

A person who has achieved this Competency Standards is competent to be:

Food Processing Worker
Food Production Worker/Staff

May also be known by specific products:
Coconut Sugar Processor

SECTION 2 COMPETENCY STANDARDS

This section gives the details of the contents of the C, common and core units of competency required in **COCONUT SUGAR PROCESSING 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 information in response to workplace requirements.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE AND ATTITUDE	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	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 AND ATTITUDE	REQUIRED SKILLS
			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	3.1 Effective verbal and non-verbal communication	3.1 Completing work-related documents

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** *terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILLS
	completed 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	3.2 Different modes of communication 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	3.2 Applying operations of 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

VARIABLES	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 format of 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 actual workplace or through an accredited institution

UNIT OF COMPETENCY : WORK IN A 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 AND ATTITUDE	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 team members based on company practices. 3.2 Effective and appropriate contributions made to	3.1 Communication Process 3.2 Workplace communication protocol 3.3 Team planning and decision making 3.4 Team thinking	3.1 Communicating appropriately, consistent with the culture of the workplace 3.2 Interacting effectively with others 3.3 Deciding as an individual and as

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** *terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILLS
	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	3.5 Team roles 3.6 Process of team development 3.7 Workplace context	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 but not limited to: 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 but not limited to: 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	May include but not limited to: 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 member to 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 AND ATTITUDE	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

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** *terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILLS
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 ***appropriate person*** for decision	2.1 Current industry hardware and software products and services 2.2 Industry service and helpdesk practices, processes and procedures 2.3 Operating systems 2.4 Industry standard diagnostic tools 2.5 Malfunctions and resolutions. 2.6 Root cause analysis	2.1 Identifying current industry hardware and software products and services 2.2 Identifying services and helpdesk practices, 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/Procedural Problem	May include but not limited to: Routine/non – routine processes and quality problems Equipment selection, availability and failure Teamwork and work allocation problem Safety and emergency situations and incidents Work-related problems outside of own work area
2. Appropriate person	May include but not limited to: 2.1 Supervisor or manager 2.2 Peers/work colleagues 2.3 Other members of the organization
3. Document	May include but not limited to: 3.1 Electronic mail 3.2 Briefing notes 3.3 Written report 3.4 Evaluation report
4. Plan	May include but not limited to: 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 an extended 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 and may 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 on the 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 AND ATTITUDE	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*** in 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 responding to	2.1 Basic SWOT analysis 2.2 Strategies to improve one's attitude in the workplace 2.3 Gibbs' Reflective Cycle/Model (Description, Feelings,	2.1 Using the basic SWOT analysis as self-assessment strategy 2.2 Developing reflective practice through realization of limitations, likes/

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILLS
	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	Evaluation, Analysis, Conclusion, and Action plan)	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-management strategies	**May include but not limited to:** 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 but not limited to:** 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 resource s 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.

ELEMENTS	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 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	3.1 Roles of individuals in suggesting and making improvements.	3.1 Identifying opportunities to improve and to do things better. Involvement. 3.2 Identifying the positive impacts and the

ELEMENTS	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	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.	3.2 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.	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

VARIABLES	RANGE
1. Opportunities for improvement	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.

VARIABLES	RANGE
5. Reporting skills	May include: 5.1 Data management. 5.2 Coding. 5.3 Data analysis and interpretation. 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 learning in 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.

ELEMENTS	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/procedures 1.6 Reporting requirements to a 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 client liaison 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 to a 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

ELEMENTS	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Assess gathered data/ information	2.1 Validity of data/ information is assessed 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 2.5 Recommendations are made on areas of possible improvement.	2.1 Business mathematics and statistics 2.2 Data analysis techniques/ procedures 2.3 Reporting requirements to a range of audiences 2.4 Legislation, policy and procedures relating to the conduct of evaluations 2.5 Organisational values, ethics and codes of conduct	2.1 Computing business mathematics and statistics 2.2 Describing data analysis techniques/ procedures 2.3 Reporting requirements to a 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 the outset. 3.4 Findings are presented to stakeholders.	3.1 Data analysis techniques/ procedures 3.2 Reporting requirements to a 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 to a 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

VARIABLES	RANGE
1. Data analysis techniques	May include but not limited to: 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 studied data/information These aspects may be best assessed using a range of scenarios what ifs as a stimulus with a walk through forming part 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 management role 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 and may 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 on the 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

ELEMENTS	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	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

ELEMENTS	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	workplace policies and procedures 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 3.3 Interpersonal skills 3.4 Troubleshooting skills 3.5 Critical thinking skills 3.6 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 the activity
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 a simulated 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

ELEMENTS	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 environmental procedures	2.1 Causes of environmental inefficiencies and ineffectiveness	2.1 Deductive Reasoning Skills 2.2 Critical thinking 2.3 Problem Solving 2.4 Observation Skills
3. Convey inefficient and ineffective environmental practices	3.1 Efficiency and effectiveness of resource utilization are reported to	3.1 Appropriate Personnel to address the environmental hazards	3.1 Written and Oral Communication Skills 3.2 Critical thinking

	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	3.2 Environmental corrective actions	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

ELEMENTS	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: 1.3.1 Patience 1.3.2 Honesty 1.3.3 Quality-conscious ness 1.3.4 Safety-conscious ness 1.3.5 Resourcef ulness	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 2.3 Cost-conscious habits in resource utilization are communicated based on industry standards.	2.1 Workplace best practices, policies and criteria 2.2 Resource utilization 2.3 Ways in fostering entrepreneurial attitudes: 2.3.1 Patience 2.3.2 Honesty 2.3.3 Quality-conscious ness	2.1 Communication skills 2.2 Complying with quality procedures 2.3 Following workplace communication protocol

		2.3.4 Safety-conscious ness 2.3.5 Resourcef ulness	
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: 4. Quality-consciousness 5. 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

3.1 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.
3.2 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
3.3 Methods of Assessment	**Competency in this unit should be assessed through:** 3.1 Interview 3.2 Third-party report
4.Context of 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 FOOD SAFETY AND SANITATION

UNIT CODE : PFB751210

UNIT DESCRIPTOR : This unit covers skills and attitude required to apply food safety and sanitation in the workplace

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Wear Personal Protective Equipment	1.1 Personal protective equipment are checked according to ***manufacturer's specifications*** 1.2 Personal protective equipment are worn according to the job requirement	1.1 Personal protective equipment (PPE) 1.2 Procedures in wearing in PPE 1.3 Good Food Manufacturing Practices 1.4 Parts and functions of personal protective equipment	1.1 Checking PPE 1.2 Practicing GMP
2. Observe Personal Hygiene and Good Grooming	2.1 Personal hygiene and good grooming is practiced in line with ***workplace health and safety requirements***	2.1 Good grooming and personal hygiene 2.2 Workplace health and safety requirements	2.1 Practicing good grooming and personal hygiene practices
3. Implement Food Sanitation Practices	3.1 Sanitary food handling practices are implemented in line with workplace sanitation regulations 3.2 Safety measures are observed in line with workplace safety practices.	3.1 Proper waste disposal 3.2 Environmental protection and concerns 3.3 Food safety principles and practices 3.4 TQM and other food quality system principles	3.1 Managing wastes 3.2 Implementing sanitary food handling practices 3.3 Practicing workplace safety

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
4. Render Safety Measures and First Aid Procedures	4.1 ***Safety measures*** are applied according to workplace rules and regulations 4.2 ***First aid procedures*** are applied and coordinated with concerned personnel according to workplace standard operating procedures.	4.1 First aid procedures 4.2 Parts and functions of personal protective equipment 4.3 First Aid Kit	4.1 Applying safety measures 4.2 Applying first aid treatment 4.3 Practicing PPE 4.4 Coordinating with concerned personnel
5. Implement housekeeping activities	5.1 Work area and surroundings are cleaned in accordance with workplace health and safety regulations 5.1 Waste is disposed according to organization's waste disposal system 5.2 ***Hazards*** in the work area are recognized and reported to designated personnel according to workplace procedures	5.1 Hazards in work area 5.2 Waste disposal 5.3 Housekeeping / 7's 5.4 Proper waste disposal	5.1 Implementing housekeeping activities 5.2 Practicing proper waste disposal 5.3 Coordination skills

RANGE OF VARIABLES

VARIABLE	RANGE
1. Manufacturer's Specifications	**Manufacturer's specifications may include but not limited to:** 1.1 Handling 1.2 Operating 1.3 Discharge Label 1.4 Reporting 1.5 Testing 1.6 Positioning 1.7 Refilling
2. Personal Protective Equipment	**Personal Protective Equipment may include but not limited to:** 2.1 Apron/laboratory gown 2.2 Mouth masks 2.3 Gloves 2.4 Rubber boots/safety shoes 2.5 Head gears such as caps, hair nets, earl plug
3. Workplace Health and Safety Requirements	**Workplace and Safety Requirements may include:** 3.1 Health/Medical Certificate 3.2 DOLE requirements 3.3 BFAD requirements 3.4 Personal Hygiene and good grooming 3.5 Plant Sanitation and waste management
4. Safety Measures	**Safety measures may include but not limited to:** 4.1 Labeling of chemicals and other sanitizing agents 4.2 Installation of firefighting equipment in the work area 4.3 Installation of safety signage and symbols 4.4 Implementation of 5S in the work area 4.5 Removal of combustible material in the work area
5. First Aid Procedures	**First Aid Procedures may include but not limited to:** 5.1 Mouth to mouth resuscitation 5.2 CPR 5.3 Application of tourniquet 5.4 Applying pressure to bleeding wounds or cuts 5.5 First aid treatment for burned victims
6. Hazards	**Hazards in the workplace may include but not limited to:** 6.1 Physical 6.2 Biological 6.3 Chemical

EVIDENCE GUIDE

1. Critical aspects of competency	**Assessment requires evidence that the candidate:** 1.1 Cleaned, checked and sanitized personal protective equipment 1.2 Practiced proper personal hygiene and good grooming 1.3 Implemented workplace food safety practices 1.4 Applied first aid measures to victims 1.5 Implemented good housekeeping activities in the work area
2. Resource implications	**The following resources MUST be provided:** 2.1 Work area/station 2.2 First Aid kit 2.3 PPE relevant to the activities 2.4 Fire extinguisher 2.5 Stretcher 2.6 Materials, tools and equipment relevant to the unit of competency
3. Method of assessment	**Competency may be assessed through:** 3.1 A combination of direct observation and questioning of a candidate processing foods.
4. Context of assessment	4.1 Assessment should occur on the job or in a simulated workplace

UNIT OF COMPETENCY : USE STANDARD MEASURING DEVICES AND INSTRUMENTS

UNIT CODE : PFB751211

UNIT DESCRIPTOR : This unit covers skills and attitude required to use standard measuring devices, instruments in the workplace

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify Standard Measuring Devices and Instruments	1.1 ***Standard measuring devices and instruments*** are identified according to manufacturer's specifications 1.2 Devices and instruments for measuring are properly checked, sanitized and calibrated prior to use	1.1 Safe handling of measuring devices and instruments 1.2 Specifications and functions of measuring devices and instruments 1.3 Defects and breakages of measuring devices and instruments 1.4 Procedures in sanitizing and calibrating and stowing equipment and instruments	1.1 Communication skills 1.2 Sanitary handling of devices and instruments 1.3 Calibrating skills
2. Review the Procedures in Using Standard Measuring Devices and Instruments	2.1 Procedures in using the ***standard measuring devices*** and instruments are recalled according to manufacturer's specifications 2.2 Printed procedures/ brochures/ catalogues are consulted according to specified ***food processing methods***	2.1 Procedures in using different standard measuring devices 2.2 Different food processing methods	2.1 Reading and following printed manuals and brochures 2.2 Using standard measuring devices

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Follow Procedures of Using Measuring Devices and Instruments	3.1 Methods/practices of using measuring devices and instruments are strictly observed according to manufacturer's specifications and workplace requirements 3.2 Measuring devices and instruments are cleaned, wiped dry and stowed after use to ensure conformity with workplace requirements	3.1 Methods/practice of using measuring devices and instruments 3.2 Procedures in cleaning, and stowing equipment and instruments	3.1 Applying methods/practices in using measuring devices and instruments 3.2 Cleaning and stowing measuring devices and instruments

RANGE OF VARIABLES

VARIABLE	RANGE
1. Standard Measuring Devices	**Standard Measuring Devices may include but not limited to the following:** 1.1 Weighing scales and balances of various capacities and sensitivities 1.2 Measuring cups of varying capacities for dry ingredients 1.3 Measuring cups of varying capacities for liquid ingredients
2. Standard Measuring Instruments	**Standard Measuring Instruments may include but not limited to the following:** 2.1 Salinometer 2.2 Thermometers of varying temperature range (0-300 C) 2.3 Refractometer of varying range (0 – 90 B) 2.4 Glasswares like cylinders, beakers, flasks) of varying graduations
3. Food Processing Methods	**Food Processing Methods include the following:** 3.1 Process foods by Salting, Curing and Smoking 3.2 Process foods by Fermentation and Pickling 3.3 Process foods by Canning and Bottling 3.4 Process foods by Sugar Concentration 3.5 Process foods by Drying and Dehydration

EVIDENCE GUIDE

1. Critical aspects of competency	**Assessment requires evidence that the candidate:** 1.1 Identified, prepared and calibrated standard measuring devices and instruments 1.2 Followed correctly the procedures in using standard measuring devices and instruments 1.3 Followed proper cleaning and sanitizing and stowing procedures of measuring devices and equipment before and after use
2. Resource implications	**The following resources MUST be provided:** 2.1 Work area/station 2.2 Materials, tools and equipment relevant to the Unit of Competency
3. Method of assessment	**Competency may be assessed through:** 3.1 Direct observation and questioning of a candidate using measuring devices and instruments
4. Context of assessment	4.1 Assessment should occur on the job or in a simulated workplace

UNIT OF COMPETENCY : USE FOOD PROCESSING TOOLS, EQUIPMENT AND UTENSILS

UNIT CODE : PFB751212

UNIT DESCRIPTOR : This unit covers skills and attitude required to operate food processing tools, equipment and instruments in the workplace.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** **are elaborated in the Range of Variables**	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Perform pre-operation activities	1.1 Appropriate tools and equipment/utensils are assembled according to ***food processing method*** 1.2 ***Food processing tools and equipment/utensils*** are inspected and checked according to manufacturer's specifications 1.3 Food processing equipment is set up, adjusted and readied according to job requirements	1.1 Procedures in assembling equipment/utensils 1.2 Methods in inspecting food processing tools and equipment / utensils 1.3 Procedures in setting-up and adjusting equipment 1.4 Equipment, tools and instruments: Parts and Functions 1.5 Written and oral communication 1.6 Interpreting manufacturer's specifications Following manufacturer's manual	1.1 Assembling equipment/ utensils 1.2 Inspecting and checking condition of equipment/ machines 1.3 Setting-up and adjusting food processing equipment 1.4 Reporting equipment/ machine, tools, instruments breakdown and recording same in standard forms 1.5 Communication skills

2. Operate food processing equipment	1.1 Food processing equipment is switched on according to ***manufacturer's specifications*** 1.2 Performance of food processing equipment is checked to ensure conformity with specified output 1.3 Operation of food processing equipment is managed to achieve planned outcomes 1.4 Minor trouble shooting on food processing tools, equipment and utensils is performed when necessary	2.1 Procedures on operating food processing equipment 2.2 Inspection of equipment with conformity with required output 2.3 Equipment/ machine wear and tear process 2.4 Minor trouble shooting of food processing tools, equipment and utensils 2.5 Following manufacturer's manual 2.6 PPE 2.7 OSHS	2.1 Inspecting and checking condition of equipment/ machines 2.2 Performing minor troubleshooting

3.Perform post-operation activities	3.1 Food processing equipment is switched off and unplugged after operation in accordance with manufacturer's specifications 3.2 Food processing tools, equipment and instruments are cleaned, sanitized and stowed as required according to manufacturer's specifications and workplace policies and regulations 3.3 ***Minor preventive maintenance*** on equipment is performed in line with organization's maintenance system 3.4 Main machine parts are inspected and checked in line with organization's policy 3.5 ***Condition of machine*** is monitored to ensure serviceability in accordance with workplace rules and regulations	3.1 Procedures of shutting down food processing equipment 3.2 Inspection machine main parts 3.3 Main machine parts 3.4 Minor preventive maintenance 3.5 Monitoring procedures for condition of machine 3.6 Monitoring checklist 3.7 PPE 3.8 OSHS 3.9 Environmental rules and regulations 3.10 Sanitizing agents: Uses and Specification 3.11 Proper cleaning and stowing of tools and equipment/ instruments	3.1 Shutting down food processing equipment 3.2 Sanitizing, cleaning and stowing measuring devices and instruments 3.3 Checking main machine parts 3.4 Performing minor preventive maintenance 3.5 Monitoring machine condition 3.6 Accomplishing monitoring checklist 3.7 Wearing PPE 3.8 Applying OSHS 3.9 Performing regular maintenance

RANGE OF VARIABLES

VARIABLES	RANGE
1. Food processing methods	**Food Processing Methods include:** 1.1 Salting 1.2 Curing 1.3 Smoking 1.4 Fermentation 1.5 Pickling 1.6 Canning 1.7 Bottling 1.8 Sugar concentration 1.9 Drying 1.10 Dehydration
2. Food processing tools, equipment and utensils	**Tools, equipment and utensils may include but not limited to:** **2.1 Tools** o Cutting implements such as: o Bolo o Sharp Knife o Plastic vessel o Weighing scale o Stainless wok o Stainless ladle o Wooden Ladle o Stainless tray o Stainless Strainer o stainless basin o Large saucepan o Scoop o Weighing scale o Spatula
	2.2 Equipment, o Stove o Dehydrator o Hammer mill pulverizer o Sealer Machine
3. Manufacturer's specifications	**Manufacturer's specifications may include but not limited to:** 3.1 Handling requirements 3.2 Operating requirements

VARIABLES	RANGE
	3.3 Discharge Label 3.4 Reporting 3.5 Testing 3.6 Positioning 3.7 Refilling
4. Minor preventive machine maintenance	**Minor Preventive Machine Maintenance may include but not limited to checking of the following:** 4.1 Machine temperature 4.2 Hydraulic fluid 4.3 Wear and surface condition 4.4 Crack 4.5 Leak detection 4.6 Vibration 4.7 Corrosion/erosion 4.8 Electric insulation
5. Condition of machine	5.1 Serviceable 5.2 Repairable 5.3 Defective

EVIDENCE GUIDE

1. Critical Aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Assembled, inspected, checked and sanitized appropriate tools and equipment/instruments 1.2 Set-up, adjusted and readied tools and equipment and instruments according to requirements 1.3 Operated and monitored performance of equipment to ensure specified output 1.4 Performed post operation activities 1.5 Performed minor trouble shooting on food processing tools, equipment and utensils
2. Methods of Assessment	**Competency in this unit must be assessed through**: 2.1 Direct observation and questioning of a candidate operating food processing tools and equipment/instruments 2.2 Submission of written report on the performance and condition of equipment/machine, tools, instruments used.
3. Resource Implications	**The following resources must be provided:** 3.1 Work area/station 3.2 Materials, tools and equipment relevant to the Unit of Competency
4. Context of Assessment	4.1 Assessment should occur on the job or in a simulated workplace

UNIT OF COMPETENCY : PERFORM MATHEMATICAL COMPUTATIONS

UNIT CODE : PFB751213

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitude to perform mathematical computations in the workplace.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Gather and tabulate the recorded data	1.1 Records of ***weights and measurements*** of raw materials and ingredients are gathered and summarized according to workplace standard operating procedures 1.2 Records of weights and measurements of finished processed products are gathered and summarized according to workplace standard operating procedures 1.3 Summarized data are tabulated according to enterprise requirements	1.1 Data gathering 1.2 Record keeping 1.3 Data summary and analysis 1.4 Basic Mathematical Operations	1.1 Gathering data 1.2 Keeping of records 1.3 Summarizing and analyzing data 1.4 Basic Mathematical skills 1.5 Basic Accounting skills
2. Review the various formulations	2.1 Raw materials and ingredients and percentage formulations are checked/counter checked according to approved specifications and enterprise requirements 2.2 Finished products and percentage formulations are reviewed according to approved specifications and enterprise requirements	2.1 Percentages and formulations of raw materials and ingredient and finished products 2.2 Procedures in checking raw materials and finished products formulation and percentages 2.3 Basic Mathematical Operations	2.1 Checking percentages formulations of raw materials and ingredient 2.2 Reviewing percentages and formulations of finished products 2.3 Numeracy skills

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Calculate production input and output	3.1 Data on raw material consumption and corresponding percentage equivalent are calculated in line with enterprise requirements 3.2 Data on actual spoilage and rejects and corresponding percentage equivalents are calculated according to enterprise requirements 3.3 Data on actual yields and recoveries and corresponding percentage equivalents are calculated according to enterprise requirements 3.4 All calculated data are recorded according to enterprise requirements	3.1 Record keeping 3.2 Mensuration 3.3 Fraction, ratios and proportions 3.4 Basic Mathematical Operations 3.5 Conversion factors 3.6 Percentage formulation	3.1 Basic Mathematical skills 3.2 Recording skills
4. Compute production cost	4.1 ***Costs of production*** are computed according to organization's standard procedures 4.2 Computed costs of production are reviewed and validated according to organization's production requirements	4.1 Cost of production 4.2 Validation procedures for computer costs 4.3 Basic Mathematical Operations	4.1 Basic Mathematical skills 4.2 Basic Accounting skills 4.3 Reviewing and validating computed costs

RANGE OF VARIABLES

VARIABLES	RANGE
1. Weights and measurements	**Weights and measurements may include:** 1.1 Gravimetric 1.2 Volumetric 1.3 Lengths, diameters, widths 1.4 Seam measurements 1.5 Hotness/coldness (temperature) 1.6 Concentrations of solutions
2. Costs of production	**Costs of production are computed using the following:** 2.1 Ingredient formulation 2.2 Percentage formulation 2.3 Conversion 2.4 Ratios and proportion 2.5 Spoilage and rejects and corresponding percentages 2.6 Recoveries and yields and corresponding percentages

EVIDENCE GUIDE

1. Critical Aspects of Competency	**Assessment requires evidence that the candidate:** 2.1 Gathered the records of weights and measurements of raw materials/ingredients and finished processed products 2.2 Summarized and tabulated all raw data gathered 2.3 Calculated the production inputs and outputs 2.4 Computed the costs of production 2.5 Reviewed all formulations and concentrations of solutions according to specifications and standards of the enterprise
2. Methods of Assessment	**Competency in this unit must be assessed through:** 2.1 A combination of direct observation and questioning of a candidate computing costs of production 2.2 Submission of a written report showing a record of production data including raw data
3. Resource Implications	**The following resources should be provided:** 3.1 Work area/station 3.2 Materials relevant to recording and documentation of production data 3.3 Computer with printer and software 3.4 Calculator 3.5 Work table
4. Context of Assessment	4.1 Assessment should occur on the job or in a simulated workplace

UNIT OF COMPETENCY : IMPLEMENT GOOD MANUFACTURING PRACTICE AND PROCEDURES

UNIT CODE : PFB751214

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to comply with relevant Good Manufacturing Practice (GMP) codes through the implementation of workplace GMP and quality procedures

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify requirements of GMP related to own work	1.1 Sources of information on GMP requirements are located 1.2 GMP requirements and responsibilities related to own work are identified	1.1 GMP Requirements 1.2 GMP Codes of practice, policies and procedures 1.3 GMP Role of internal and external auditors 1.4 Contamination events and performance improvement processes procedures 1.5 Personal clothing and footwear requirements at work areas 1.6 Use of personal clothing, storage and disposal requirements 1.7 Micro biological, physical and chemical contaminants 1.8 Basic concepts of quality assurance 1.9 Control methods and procedures used in GMP	1.1 Planning and organizing work (time management) 1.2 Working with others and in teams 1.3 Practicing GMP 1.4 Following contamination investigation procedures

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		1.10 GMP responsibilities and requirements relating to work role 1.11 Basic properties, handling and storage requirements of raw materials, packaging components and final product 1.12 Standards for materials, equipment and utensils used in the work area 1.13 Recall and traceability procedures relevant to work role 1.14 Procedures for identifying or isolating materials or product of unacceptable quality 1.15 Record keeping and the recording requirements of GMP.	

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Observe personal hygiene and conduct to meet GMP requirements	2.1 Personal hygiene meets GMP requirements 2.2 Clothing is prepared, used, stored and disposed of according to GMP and workplace procedures 2.3 Personal movement around the workplace complies with area entry and exit procedures	2.1 Workplace entry and exit procedures 2.2 Personal hygiene 2.3 PPE	2.1 Following workplace entry and exit procedures 2.2 Practicing OSHS 2.3 Practicing GMP
3. Implement GMP requirements when carrying out work activities	3.1 GMP requirements are identified 3.2 ***Work area***, materials, equipment and product are routinely monitored to ensure compliance with GMP requirements 3.3 Raw materials, packaging components and product are handled according to GMP and workplace procedures 3.4 Workplace procedures to control resource allocation and process are followed to meet GMP requirements 3.5 Common forms of contamination are identified and appropriate control measures are followed according to GMP requirements 3.6 The workplace is maintained in a clean and tidy order to meet GMP housekeeping standard	3.1 Monitoring methods of work area, materials and equipment 3.2 Handling of raw materials, packaging components and product 3.3 Control resource allocation and processes in the workplace 3.4 Contaminants 3.5 Good Manufacturing Practices (GMP)	3.1 Identifying GMP requirements 3.2 Monitoring routinely of work area, materials equipment and product 3.3 Handling of raw materials, packaging components and product 3.4 Maintaining cleanliness in the workplace

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
4. Participate in improving GMP	4.1 Processes, practices or conditions which could result in non-compliance with GMP are identified and reported according to workplace reporting requirements 4.2 Corrective action is implemented within level of responsibility 4.3 GMP issues are raised with designated personnel	4.1 Non-compliance and corrective action in GMP 4.2 Corrective actions	4.1 Practicing GMP 4.2 Reporting workplace condition 4.3 Implementing corrective measures
5. Participate in validation processes	5.1 Validation procedures are followed to GMP requirements 5.2 Issues arising from validation are raised with designated personnel 5.3 Validation procedures are documented to meet GMP requirements	5.1 Validation procedures in GMP 5.2 Issues arising from validation 5.3 Documentation of validation procedures	5.1 Following validation procedures 5.2 Reporting issues arising from validation 5.3 Documenting validation procedures
6. Complete workplace documentation to support GMP	6.1. Documentation and recording requirements are identified 6.2. Information is recorded according to ***workplace reporting procedures*** to meet GMP requirements	6.1. Documentation and workplace reporting procedures in GMP 6.2. Information and workplace reporting procedures	6.1. Keeping records 6.2. Recording information

RANGE OF VARIABLES

VARIABLES	RANGE
1. OH&S requirements may include:	1.1. OH&S legal requirements 1.2. Enterprise OH&S policies, procedures and programs
2. Work in carried out in accordance with regulations. Regulatory requirements may include:	2.1. Relevant regulations regarding food processing and food safety regulations 2.2. Department of Health – Food Establishments – Code of Sanitation of the Philippines (P.D.856) 2.3. Environment Management Bureau regulations regarding emissions, waste treatment, noise and effluent treatment and control
3. Hygiene and sanitation requirements may include:	3.1. Department of Health – Food Establishments – Code of Sanitation of the Philippines (P.D.856) 3.2. Requirements set out by Bureau of Food and Drugs 3.3. Workplace requirements
4. Workplace requirements may include:	4.1. Work instructions 4.2. Standard operating procedures 4.3. OH&S requirements 4.4. Quality assurance requirements 4.5. Equipment manufacturers' advice 4.6. Material Safety Data Sheets 4.7. Codes of Practice and related advice
5. Products may include	5.1. Products, raw materials, packaging components and consumables, part-processed product, finished product and cleaning materials
6. Responsibility and reporting systems	6.1. Responsibility for applying Good Manufacturing Practice relates to the person's work area 6.2. Reporting systems may include electronic and manual data recording and storage systems

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidences that the candidate:** 1.1 Located and followed workplace information relating to GMP responsibilities 1.2 Maintained personal hygiene consistent with GMP 1.3 Followed workplace procedures when moving around the workplace and/or from one task to another to maintain GMP 1.4 Used, stored and disposed of appropriate clothing/footwear as required by work tasks and consistent with GMP 1.5 Identified and reported situations that do or could compromise GMP

	1.6 Applied appropriate control measures to control contamination 1.7 Recorded results of monitoring, and maintain records as required by GMP 1.8 Followed validation procedures within level of responsibility 1.9 Identified and responded to out-of-specification or unacceptable raw materials, packaging components, final or part processed product within level of responsibility 1.10 Followed procedures to isolate or quarantine non-conforming product 1.11 Handled, cleaned and stored equipment, utensils, raw materials, packaging components and related items according to GMP and workplace procedures 1.12 Maintained GMP for own work 1.13 Handled and/or disposed of out-of-specification or contaminated materials, packaging components/consumables and product, waste and recyclable material according to GMP as required by work responsibilities 1.14 Maintained the work area in a clean and tidy state 1.15 Identified and reported signs of pest infestation
2. Resource Implication	**The following resources should be provided:** 2.1 Workplace location and access to workplace policies 2.2 Materials relevant to the proposed activity and tasks
3. Methods of Assessment	**Competency in this unit must be assessed using at least two (2) of the following methods:** 3.1 A combination of direct observation and oral questioning 3.2 Written report 3.3 Written Test Portfolio
4. Context of Assessment	Assessment should occur on the job or in a simulated workplace

UNIT OF COMPETENCY : IMPLEMENT ENVIRONMENTAL POLICIES AND PROCEDURES

UNIT CODE : PFB751215

UNIT DESCRIPTOR : This unit covers skills and attitude required to implement environmental policies and procedures when carrying out work responsibilities

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Conduct work in accordance with environmental policies and procedures	1.1. Immediate work area is routinely checked to ensure compliance with environmental requirements 1.2. ***Hazards*** and unacceptable performance are identified, removed and/or reported to appropriate personnel according to workplace procedures 1.3. Workplace procedures and work instructions are followed 1.4. Where control requirements are not met, incidents are promptly reported and corrective action is taken 1.5. Measures used to minimize and handle waste are followed 1.6. Environmental data is recorded in required format according to workplace reporting requirements	1.1 Workplace approach to managing environmental issues 1.2 Responsibilities of self and employer to manage environmental issues on site 1.3 Sources of advice on environmental issues in the workplace 1.4 Environmental hazards and risks associated with the work 1.5 Work procedures as they relate to environmental responsibilities 1.6 Procedures used to prevent or control environmental risks associated with own work 1.7 Basic concepts of hazard identification, risk	1.1 Planning and organizing work (time management) 1.2 Working with others and in teams 1.3 Practicing environmental skills environmental skills

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		assessment and control options 1.8 Identifying and responding to hazards 1.9 Impact of work practices on resource utilization and wastage 1.10 Procedures used to handle and dispose of waste 1.11 The difference between trade waste and storm water drains 1.12 Consequences of inappropriate waste handling and disposal 1.13 Procedures for responding to unplanned incidents such as spills and leaks 1.14 Emergency response system and procedures 1.15 Responsible use of resources in own work area 1.16 Reporting procedures and responsibilities 1.17 Consultative processes in the workplace for raising issues/ suggestions on	

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		environmental issues.	
2. Participate in improving environmental practices at work	2.1 Processes or conditions which could result in an unacceptable environmental outcome are identified and reported according to workplace reporting requirements. 2.2 Corrective action is taken in accordance with the environmental management and emergency response plans as required. 2.3 Contributions are made to participative arrangements for managing environmental issues in the workplace within workplace procedures and level of responsibility.	2.1 Unacceptable environmental outcomes 2.2 Corrective action 2.3 Emergency response plan 2.4 Improvement in environmental practices 2.5 Report preparation	2.1 Identifying and reporting unacceptable environmental outcomes 2.2 Implementing corrective actions 2.3 Participating in improvement of environmental practices 2.4 Practicing written communication skills
3. Respond to an environmental emergency	3.1 Emergency situations are identified and reported according to workplace reporting requirements 3.2 Emergency procedures are followed as appropriate to the nature of the emergency and according to workplace procedures	3.1 Emergency situations 3.2 Emergency procedures	3.1 Identifying emergency situations 3.2 Following emergency procedures 3.3 Practicing written communication skills

RANGE OF VARIABLES

VARIABLE	RANGE
1. OH&S requirements may include:	1.1. OH&S legal requirements 1.2. Enterprise OH&S policies, procedures and programs
2. Work in carried out in accordance with regulations. Regulatory requirements may include:	2.1. Relevant regulations regarding food processing and food safety regulations 2.2. Department of Health – Food Establishments – Code of Sanitation of the Philippines (P.D.856) 2.3. Environment Management Bureau regulations regarding emissions, waste treatment, noise and effluent treatment and control
3. Hygiene and sanitation requirements may include:	3.1. Department of Health – Food Establishments – Code of Sanitation of the Philippines (P.D.856) 3.2. Requirements set out by Bureau of Food and Drugs 3.3. Workplace requirements
4. Workplace requirements may include:	4.1. Work instructions 4.2. Standard operating procedures 4.3. OH&S requirements 4.4. Quality assurance requirements 4.5. Equipment manufacturers' advice 4.6. Material Safety Data Sheets 4.7. Codes of Practice and related advice

5. Identification and control of hazards may include:	5.1. Procedures are available that outline appropriate response to environmental incidents, accidents and emergencies 5.2. At this level identification and control of environmental hazards relates to own work. Corrective action typically involves recognizing any event which occurs as part of the work process and presents an unacceptable environmental risk or outcome, taking corrective action within level of responsibility, and/or reporting to the appropriate person in the work area 5.3. Work responsibilities may involve handling of hazardous waste 5.4. An environmental hazard is any activity, product or service that has the potential to affect the environment. This may also be referred to as an environmental aspect 5.5. An environmental risk is the likelihood that the hazard can cause harm to the environment 5.6. A control measure is a method or procedure used to prevent or minimize environmental risks 5.7. Responsibility for identifying and controlling environmental risks relates to immediate work responsibilities 5.8. Participating in improvement may involve participation in structured improvement programs, one-off projects and day-to-day problem solving and consultative groups

EVIDENCE GUIDE

1. Critical aspects of Competency	**Assessment requires evidences that the candidate:** 1.1 Accessed and apply workplace information on environmental policies and procedures relating to own work 1.2 Fitted and used appropriate personal protective clothing and equipment 1.3 Checked own work area to identify environmental hazards 1.4 Reported hazards according to workplace procedure in a clear and timely manner 1.5 Followed work procedures to control or minimize environmental risk. This may include monitoring parameters set for environmental aspects such as airborne particulate, noise, and water quality. It may also include demonstrating use of emergency equipment according to work role requirements 1.6 Recorded environmental information as required by the environmental management program 1.7 Participated in processes to raise issues and suggestions to improve environmental issues management. This requires appropriate communication skills to structure and present information and interact with others 1.8 Followed procedures to collect, deposit, recycle and/or dispose of waste in own work area

	1.9 Followed procedures to respond to environmental emergencies such as spills and emissions. This may include following procedures to alert the appropriate emergency services 1.10 Maintained housekeeping standards in work area
2. Resource Implication	**The following resources should be provided:** 2.1 Workplace location and access to workplace policies 2.2 Materials relevant to the proposed activity and tasks
3. Methods of Assessment	**Competency in this unit must be assessed using at least two (2) of the following methods:** 3.1 A combination of direct observation and oral questioning 3.2 Written report 3.3 Written Test 3.4 Portfolio
4. Context of Assessment	4.1 Assessment should occur on the job or in a simulated workplace

CORE COMPETENCIES

UNIT OF COMPETENCY : **COLLECT COCONUT SAP**

UNIT CODE : **AB-PFB06030296121301**

UNIT DESCRIPTOR : This unit deals with the knowledge, skills and attitudes required to collect coconut to be used in coconut processing.

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Select bearing coconut trees;	1.1 ***Mature coconut trees*** are selected. 1.2 ***Healthy*** and unopened ***inflorescence*** for tapping is selected. 1.3 Safety measures are applied in accordance with Occupational Safety and Health Standards (OSHS**).**	**Science and Technology :** • Physiology of coconut trees • Varietal Range of coconut trees **Environment:** • Drought tolerance of trees • Soil compatibility • Local agricultural practices and biodiversity **Mathematics:** • Number of inflorescences • Longevity of trees **Communication:** • Local agricultural and environmental regulations • Contingency Planning	2.1 Segregating reject raw materials 2.2 Preparing raw materials 2.3 Sorting and grading of raw materials 2.4 Using tools and utensils 2.5 Interpersonal skills 2.6 Oral communication skills 2.7 Performing basic mathematical skills 2.8

2. Bend the mature unopened inflorescence	***2.1 Mature*** and unopened ***inflorescence*** are gradually bended in accordance with the procedure. ***2.2*** The inflorescence are tied with plastic twine in accordance with the procedure. ***2.3*** Safety measures are applied in accordance with Occupational Safety and Health Standards (OSHS**).**	**Science and Technology :** • Physiology of coconut trees • Morphology of the inflorescence • Pollination Biology **Environment:** • Local agricultural practices and biodiversity • Microclimates affecting inflorescence **Mathematics:** • Number of inflorescences • Age and maturity **Communication:** • Local agricultural and environmental regulations • Contingency Planning	2.1 Recording and reporting skills on the condition and defects of tools, utensils and equipment. 2.2 Interpersonal skills 2.3 Oral communication skills 2.4 Performing basic mathematical skills for computing daily production inputs 2.5 Performing Conversions 2.6 Following environment rules and regulations in segregating and disposing wastes 2.1 Practicing OSHS such as wearing of PPE 2.2 Maintaining various equipment, tools and utensils such as cleaning and sanitizing 2.9 Sourcing quality raw materials and ingredients

3. Collect coconut sap	3.1 Coconut Inflorescence are tapped thru an ***appropriate tapping technique***. 3.2 Liquid sap oozing out are collected with the use of a sanitized container. 3.3Collected coconut sap is sieved. 3.4 Saps are collected during ***favorable environmental conditions*.**	**Science and Technology :** • Physiology of coconut trees • Morphology of the inflorescence • Pollination Biology **Environment:** • Local agricultural practices and biodiversity • Microclimates affecting inflorescence **Mathematics:** • Number of inflorescences • Volume of sap **Communication:** • Local agricultural and environmental regulations • Contingency Planning	1.10 Following environment rules and regulations in segregating and disposing wastes 1.11 Practicing OSHS such as wearing PPE Personal Protective Equipment) 1.12 Practicing cGMP, SSOP and 7S 1.13 Practicing sanitation in preparing various equipment, tools and utensils 1.14 Maintaining various equipment, tools and utensils such as cleaning and sanitizing 1.15 Sourcing of quality supplies and materials according to specifications.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Mature coconut trees	Include: 1.1 Coconut that are 5 – 15 years old; 1.2 Trees with robust growth, healthy leaves, and a strong trunk; 1.3 Absence of diseases or pests
2. Healthy inflorescence	Include: 2.1 High number of inflorescences 2.2 well-formed flower clusters
3. Appropriate Tapping Technique	Include: 3.1 Use of clean, sharp tools; 3.2 Minimize damage to trees and inflorescence
4. Favorable Environmental Conditions	Include: 4.1 Dry, stable weather 4.2 Free from pollutants

EVIDENCE GUIDE

1. Critical Aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Identification of mature coconut bearing trees; 1.2 Tapping coconut inflorescence 1.3 Collecting Sap
2. Resource Implications	**The following resources should be provided:** 2.1 An area with mature coconut trees must be available; 2.2 Appropriate tapping tools and materials must be provided; 2.3 Appropriate sap collection tools must be available.
3. Methods of Assessment	**Competency in this unit must be assessed using at least two (2) of the following methods:** 3.1 Written test 3.2 Demonstration with oral questioning 3.3 Direct observation with oral questioning
4. Context of Assessment	4.1 Competency maybe assessed in actual workplace or at the designated TESDA Accredited Assessment Center.

UNIT OF COMPETENCY : PROCESS COCONUT SAP TO COCONUT SUGAR

UNIT CODE : AB-PFB06030296121302

UNIT DESCRIPTOR : This unit deals with the knowledge, skills and attitudes required to process coconut sap to coconut sugar which include the preparation of equipment, tools, materials and utensils, prepare the raw materials, packing finished products and perform other activities relevant to the requirements on proper waste disposal, Occupational Safety and Health Standards (**OSHS),** Current Good Manufacturing Practices, Sanitation Standard Operating Procedures (SSOP).

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Prepare equipment, tools, materials and utensils	1.1 ***Equipment and tools*** are prepared in accordance with manufacturer's specifications 1.2 ***Processing materials*** are sourced-out and made available according to work requirements. 1.3 ***Kitchen utensils*** are checked and sanitized in accordance with manufacturer's specifications. 1.4 Safety measures are applied in accordance with Occupational Safety and Health Standards (OSHS)	**Science and Technology :** • Thermodynamics on the heat resistance of tools and equipment. • High-precision manufacturing technology **Environment:** • Recyclable materials • Biodegradable and Renewable Resources **Mathematics:** • Shape and Structure of tools and materials used • Estimate cost of materials and production **Communication:** • User Instructions and Warnings • Product Descriptions	• Inspecting and checking skills • Calibrating of weighing scales and quality control tools such as thermometer, and refractometer • Recording and reporting skills on the condition and defects of tools, utensils and equipment. • Accomplishing of monitoring checklist • Sourcing of • processing materials • Checking and sanitizing kitchen utensils • Communication skills • Interpersonal skills • Oral communication • Writing skills, accomplishing forms and checklist in line with preparation activities

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Cook Collected Sap	2.1 Collected sap is boiled in accordance with the required temperature and duration. 2.2 Scum from boiling sap is removed. 2.3 Boil sap is stirred in accordance with the procedure.	**Science and Technology :** • Boiling Point • Sugar Chemistry **Environment:** • Coconut Farming Practices • Biodiversity Conservation **Mathematics:** • Volume of Sap Collected • Heat and Time Calculations **Communication:** • User Instructions and Warnings • Training of Staff	• Following • environment rules and regulations in segregating and disposing wastes; • Practicing OSHS such as wearing PPE Personal Protective Equipment) • Practicing cGMP, SSOP and 7S • Practicing • sanitation in preparing various equipment, tools and utensils • Maintaining various equipment, tools and utensils such as cleaning and sanitizing • Sourcing quality supplies and materials according to specifications

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Process coconut syrup to coconut sugar	3.1 Coconut syrup is dried in accordance with the procedure. 3.2 Coconut sugar is dehydrated in accordance with the procedure. 3.3 Coconut sugar is pulverized in accordance with the procedure. 3.4 Coconut sugar is sieved in accordance with the procedure.	**Science and Technology :** • Boiling Point • Sugar Chemistry **Environment:** • Coconut Farming Practices • Biodiversity Conservation **Mathematics:** • Volume of Sap Collected • Heat and Time Calculations **Communication:** • User Instructions and Warnings • Training of Staff	• Following • environment rules and regulations in segregating and disposing wastes; • Practicing OSHS such as wearing PPE Personal Protective Equipment) • Practicing cGMP, SSOP and 7S • Practicing • sanitation in preparing various equipment, tools and utensils • Maintaining various equipment, tools and utensils such as cleaning and sanitizing • Sourcing quality supplies and materials according to specifications

4. Pack coconut sugar	4.1 ***Coconut sugar*** are packed and weighed in accordance with product specifications and required filling temperature 4.2 Coconut sugar are sealed and labeled in accordance with product specifications 4.3 Air cooling is performed according to product requirements. 4.4 ***Packing equipment*** is operated in accordance with instructions manual. 4.5 ***Finished product inspection*** is conducted in accordance with the standard.	**Science and Technology :** • Humidity Levels • Chemical Stability **Environment:** • Temperature Control • Waste Disposal **Mathematics:** • Production inventory • Estimate cost of materials and production **Communication:** • User Instructions and Warnings • Product Descriptions	• Packing skills for sugar concentrated products • Labeling and sealing skills for sugar concentrated products • Performing air cooling procedures • Operating packing equipment such as sealer • Inspecting • finished products for conformance to specifications • Determining correct headspace.

5. Perform post-production activities	5.1 Packed food products are stored according to required storage period. 5.2 Tools, materials and equipment are cleaned and stored based on workplace procedures and operation manuals 5.3 Proper disposal of wastes are practiced according to environmental rules and regulations. 4.6 Production data checklist is accomplished according to enterprise protocol.	**Science and Technology :** • Humidity Levels • Shelf Life **Environment:** • Temperature Control • Waste Disposal **Mathematics:** • Production inventory • Estimate cost of materials and production **Communication:** • User Instructions and Warnings • Product Descriptions	• Incubating packed food products • Storing packaged food products • Cleaning and storing of equipment, tools and utensils • Storing excess materials and ingredients • Operating storage equipment • Recording of storage time and temperature for finished products • Recording of spoilage and rejects • Recording of storage time and temperature • Recording of production data • Accomplishing/ completing enterprise forms and checklist on packing activities • Practicing • interpersonal skills • Demonstrating oral communication skills • Accomplishing inventory forms • Demonstrating basic mathematical skills for production data

RANGE OF VARIABLES

VARIABLES	RANGE
1. Equipment and Tools	**May include but not limited to:** 1.1 Stainless tables 1.2 Storage equipment like large plastic containers with cover. 1.3 Thermometer and timer 1.4 Weighing scale of various capacities and sensitivities 1.5 Cooking equipment like stove/burner 1.6 Strainers, stainless trays, stainless ladles, wooden ladles, large wok, and saucepans. 1.7 Personal Protective Equipment (PPE) include apron, mouth masks, gloves and rubber boots, headgears such as caps, hairnets
2. Processing Materials	**Includes:** 2.1 Sugar 2.2 Water 2.3 Food additives
3. Kitchen Utensils	**May include:** 3.1 Cutting implements such as: 3.1.1 Paring knives 3.1.2 Bolo 3.2 Cooking utensils like: 3.2.1 stainless enameled plastic casserole 3.2.2 colanders 3.2.3 bowls 3.2.4 steamer 3.2.5 strainer 3.2.6 basting spoon paddle 3.2.7 spatula 3.2.8 ladle
6. Packing Equipment	**May include:** 6.1 Impulse sealer 6.2 Band sealer 6.3 Vacuum sealer 6.4 Plastic protect cap sealer 6.5 Plastic sealer 6.6 Hot blower
7. Finished Product inspection	**Includes:** 7.1 Package integrity 7.2 Appropriateness of label 7.3 Conformance to product specifications

VARIABLES	RANGE
8. Production Data	**Include:** 9.1 Production schedule 9.2 Production target 9.3 Production input 9.3.1 Raw Materials 9.3.2 Ingredients 9.3.3 Processing materials 9.3.4 Packaging materials 9.4 Production output 9.4.1 Quantity of finished goods 9.4.2 Rejects 9.4.3 Yields

EVIDENCE GUIDE

1. Critical Aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Prepared equipment, tools, materials and utensils 1.2 Prepared the raw materials 1.3 Produced Coconut Sap Sugar 1.4 Packed Coconut sap sugar 1.5 Performed post production activities 1.6 Practiced cGMP, HACCP, 7S of Good Housekeeping, SSOP, AQL and OSHS
2. Resource Implications	**The following resources should be provided:** 3.1 Specific work area/station 3.2 Equipment, tools and utensils to prepare and to process fruits and vegetables by sugar concentration. 3.3 Materials relevant to the proposed activity
3. Methods of Assessment	**Competency in this unit must be assessed using at least two (2) of the following methods:** 2.1 Written test 2.2 Demonstration with oral questioning 2.3 Direct observation with oral questioning
4. Context of Assessment	4.1 Competency maybe assessed in actual workplace or at the designated TESDA Accredited Assessment Center.

GLOSSARY OF TERMS

Coconut Sap - is the sweet, watery liquid extracted from the flowering buds of coconut trees (*Cocos nucifera*). It is rich in natural sugars, particularly sucrose, glucose, and fructose, and serves as the primary raw material for producing various products like coconut sugar, coconut syrup, and vinegar.

Coconut Inflorescence - refers to the cluster of flowers on a coconut palm tree (*Cocos nucifera*) that eventually produce the coconuts. It is essentially the reproductive structure where the male and female flowers are located. The inflorescence is found inside the coconut palm's flower sheath, which is often called a spathe.

Coconut syrup - is a natural sweetener made from the sap of the coconut tree. It is like maple syrup in texture and can be used as a sweetener in cooking, baking, and beverages.

Coconut Sap Yield - refers to the amount of sap collected from a coconut tree over a given period.

Drying - refers to the process of removing moisture from a substance to reduce its water content.

Dehydration - refers to the process of removing water or moisture from a substance to preserve it and increase its shelf life.

Packing - is an essential step in ensuring its quality, freshness, and shelf life. Proper packaging helps protect the coconut sugar from moisture, contamination, and environmental factors that could degrade its texture, taste, or nutritional content.

Processing - refers to the series of steps involved in converting raw materials into a finished product.

Pulverizing - refers to the mechanical process of breaking down a material into very fine particles or powder form.

PPE Personal Protective Equipment - include apron, mouth masks, gloves and rubber boots, headgears such as caps, hairnets.

Sieving - is a process used to separate or classify particles of different sizes by passing them through a mesh or screen.

Sealing - refers to the process of closing or securing packaging to prevent the contents from exposure to air, moisture, or contaminants, ensuring freshness and extending shelf life.

Storage - refers to the proper method and environment for keeping food products after processing and packaging, ensuring they remain fresh and safe until consumption.

Tapping - is the process of extracting sap from the flower bud (inflorescence) of the coconut palm.

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THE TECHNICAL EXPERTS

MAXIMO T. LOCOP, JR.
MUFDA Farm, Silago So. Leyte

ERLINDA D. LOCOP
MUFDA Farm, Silago So. Leyte