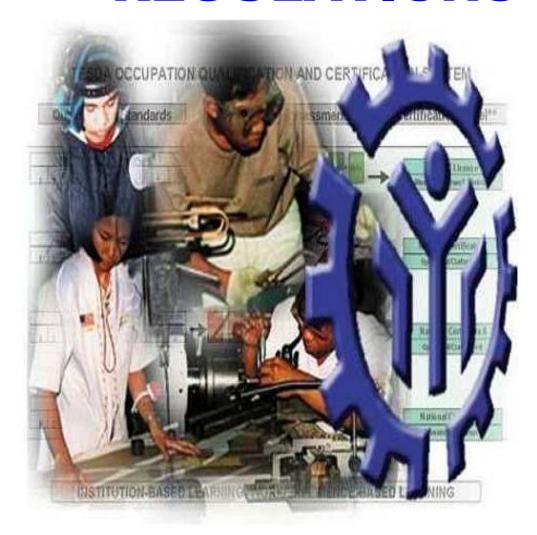# TRAINING REGULATIONS

FOOD PROCESSING NC IV

PROCESSED FOOD AND BEVERAGES SECTOR

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

TABLE OF CONTENTS

PROCESSED FOOD AND BEVERAGES SECTOR

FOOD PROCESSING NC IV

TRAINING REGULATIONS FOR
FOOD PROCESSING NC IV

Section 1 FOOD PROCESSING NC IV QUALIFICATION

The **Food Processing NC IV** Qualification consists of competencies that a person must achieve to set up and operate production and packaging lines and systems, participate in evaluation processes, and monitor practices and procedures.

This Qualification is packaged from the competency map of the Processed Food and Beverages Sector as shown in Annex A.

The units of competency comprising this qualification include the following:

Code	BASIC COMPETENCIES
500311115	Utilize specialized communication skills
500311116	Develop team and individual
500311117	Apply problem solving techniques in the workplace
500311118	Collect, analyze and organize information
500311119	Plan and organize work

Code	COMMON COMPETENCIES
AGR741201	Apply Food Safety and Sanitation
AGR741202	Use Standard Measuring Devices / Instruments
AGR741203	Use Food Processing Tools, Equipment and Utensils
AGR741204	Perform Mathematical Computation
AGR741205	Implement Good Manufacturing Practice Procedure
AGR741206	Implement Environmental Policies and Procedures
AGR741208	Monitor the Implementation of Good Manufacturing Practice Procedures
AGR741209	Monitor the Implementation of Environmental Management Policies

Code	CORE COMPETENCIES
AGR741323	Apply raw materials / ingredients and process knowledge
AGR741324	Maintain food safety when loading, unloading and transporting food
AGR741325	Participate in sensory analysis
AGR741326	Set up and operate processes in a production/packaging system
AGR741327	Participate in an audit process
AGR741328	Participate in a HACCP team
AGR741329	Monitor workplace performance and participate in improvement process

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

- **Food Production Supervisor**
- **Food Packaging Supervisor**

SECTION 2   **COMPETENCY STANDARDS**

These guidelines are set to provide the Technical Vocational Education and Training (TVET) providers with information and other important requirements to consider when designing training programs for **FOOD PROCESSING NC IV.** These units of competency are categorized into basic, common and core competencies.

BASIC COMPETENCIES

UNIT OF COMPETENCY	:	**UTILIZE SPECIALIZED COMMUNICATION SKILLS**
UNIT CODE	:	**500311115**
UNIT DESCRIPTOR	:	This unit covers the knowledge, skills and attitudes required to use specialized communication skills to meet specific needs of internal and external clients, conduct interviews, facilitate group discussions, and contribute to the development of communication strategies.

ELEMENT	PERFORMANCE CRITERIA *Bold, italicized* terms are elaborated in the Range of Variables
1. Meet common and specific communication needs of clients and colleagues	1.1 Specific communication needs of clients and colleagues are identified and met 1.2 Different approaches are used to meet communication needs of clients and colleagues 1.3 Conflict is addressed promptly and in a timely way and in a manner which does not compromise the standing of the organization
2. Contribute to the development of communication strategies	2.1 ***Strategies*** for internal and external dissemination of information are developed, promoted, implemented and reviewed as required 2.2 Channels of communication are established and reviewed regularly 2.3 Coaching in effective communication is provided 2.4 Work related network and relationship are maintained as necessary 2.5 Negotiation and conflict resolution strategies are used where required 2.6 Communication with clients and colleagues is appropriate to individual needs and organizational objectives
3. Represent the organization	3.1 When participating in internal or external forums, presentation is relevant, appropriately researched and presented in a manner to promote the organization

	3.2 Presentation is clear and sequential and delivered within a predetermined time 3.3 Utilize appropriate media to enhance presentation 3.4 Differences in views are respected 3.5 Written communication is consistent with organizational standards 3.6 Inquiries are responded in a manner consistent with organizational standard
4. Facilitate group discussion	4.1 Mechanisms which enhance *effective group interaction* is defined and implemented 4.2 Strategies which encourage all group members to participate are used routinely 4.3 Objectives and agenda for meetings and discussions are routinely set and followed 4.4 Relevant information is provided to group to facilitate outcomes 4.5 Evaluation of group communication strategies is undertaken to promote participation of all parties 4.6 Specific communication needs of individuals are identified and addressed
5. Conduct interview	5.1 A range of appropriate communication strategies are employed in *interview situations* 5.2 Records of interviews are made and maintained in accordance with organizational procedures 5.3 Effective questioning, listening and nonverbal communication techniques are used to ensure that required message is communicated

RANGE OF VARIABLES

VARIABLE	RANGE
1. Strategies	1.1 Recognizing own limitations 1.2 Referral to specialists 1.3 Utilizing techniques and aids 1.4 Providing written drafts 1.5 Verbal and non verbal communication
2. Effective group interaction	2.1 Identifying and evaluating what is occurring within an interaction in a non judgmental way 2.2 Using active listening 2.3 Making decision about appropriate words, behavior 2.4 Putting together response which is culturally appropriate 2.5 Expressing an individual perspective 2.6 Expressing own philosophy, ideology and background and exploring impact with relevance to communication
3. Types of Interview	3.1 Related to staff issues 3.2 Routine 3.3 Confidential 3.4 Evidential 3.5 Non disclosure 3.6 Disclosure
4. Interview situations	4.1 Establish rapport 4.2 Elicit facts and information 4.3 Facilitate resolution of issues 4.4 Develop action plans 4.5 Diffuse potentially difficult situation

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate:
	1.1 Demonstrated effective communication skills with clients accessing service and work colleagues
	1.2 Adopted relevant communication techniques and strategies to meet client particular needs and difficulties
2. Underpinning Knowledge	2.1 Communication process
	2.2 Dynamics of groups and different styles of group leadership
	2.3 Communication skills relevant to client groups
3. Underpinning Skills	3.1 Full range of communication techniques including:
	3.1.1 Full range of communication
	3.1.2 Active listening
	3.1.3 Feedback
	3.1.4 Interpretation
	3.1.5 Role boundaries setting
	3.1.6 Negotiation
	3.1.7 Establishing empathy
	3.2 Communication skills required to fulfill job roles as specified by the organization
4. Resource Implications	4.1 Access to appropriate workplace where assessment can take place
5. Methods of Assessment	Competency may be assessed through
	5.1 Direct observation
	5.2 Oral Interview
6. Context for Assessment	6.1 This unit should be assessed on the job through simulation

UNIT OF COMPETENCY : DEVELOP TEAMS AND INDIVIDUALS

UNIT CODE   : 500311116

UNIT DESCRIPTOR   : This unit covers the skills, knowledge and attitudes required to determine individual and team development needs and facilitate the development of the workgroup.

ELEMENT	PERFORMANCE CRITERIA *Bold, italicized* terms are elaborated in the Range of Variables
1. Provide team leadership	1.1. ***Learning and development needs*** are systematically identified and implemented in line with ***organizational requirements*** 1.2. Learning plan to meet individual and group training and developmental needs is collaboratively developed and implemented 1.3. Individuals are encouraged to self evaluate performance and identify areas for improvement 1.4. ***Feedback on performance*** of team members is collected from relevant sources and compared with established team learning process
2. Foster individual and organizational growth	2.1. Learning and development program goals and objectives are identified to match the specific knowledge and skills requirements of competency standards 2.2. ***Learning delivery methods*** are appropriate to the learning goals, the learning style of participants and availability of equipment and resources 2.3. Workplace learning opportunities and coaching/ mentoring assistance are provided to facilitate individual and team achievement of competencies 2.4. Resources and timelines required for learning activities are identified and approved in accordance with organizational requirements
3. Monitor and evaluate workplace learning	3.1. Feedback from individuals or teams is used to identify and implement improvements in future learning arrangements 3.2. Outcomes and performance of individuals/teams are assessed and recorded to determine the effectiveness of development programs and the extent of additional support 3.3. Modifications to learning plans are negotiated to improve the efficiency and effectiveness of learning

TR- Food Processing NC IV

		3.4.	Records and reports of competency are maintained within organizational requirement
4.	Develop team commitment and cooperation	4.1.	Open communication processes to obtain and share information is used by team
		4.2.	Decisions are reached by the team in accordance with its agreed roles and responsibilities
		4.3.	Mutual concern and camaraderie are developed in the team
5.	Facilitate accomplishment of organizational goals	5.1.	Team members actively participated in team activities and communication processes
		5.2.	Team members developed individual and joint responsibility for their actions
		5.3.	Collaborative efforts are sustained to attain organizational goals

TR- Food Processing NC IV

RANGE OF VARIABLES

VARIABLE	RANGE
1. Learning and development needs	1.1 Coaching, mentoring and/or supervision 1.2 Formal/informal learning program 1.3 Internal/external training provision 1.4 Work experience/exchange/opportunities 1.5 Personal study 1.6 Career planning/development 1.7 Performance appraisals 1.8 Workplace skills assessment 1.9 Recognition of prior learning
2. Organizational requirements	2.1 Quality assurance and/or procedures manuals 2.2 Goals, objectives, plans, systems and processes 2.3 Legal and organizational policy/guidelines and requirements 2.3 Safety policies, procedures and programs 2.4 Confidentiality and security requirements 2.5 Business and performance plans 2.6 Ethical standards 2.7 Quality and continuous improvement processes and standards
3. Feedback on performance	3.1 Formal/informal performance appraisals 3.2 Obtaining feedback from supervisors and colleagues 3.3 Obtaining feedback from clients 3.4 Personal and reflective behavior strategies 3.5 Routine and organizational methods for monitoring service delivery
4. Learning delivery methods	4.1 On the job coaching or mentoring 4.2 Problem solving 4.3 Presentation/demonstration 4.4 Formal course participation 4.5 Work experience 4.6 Involvement in professional networks 4.7 Conference and seminar attendance 4.8 Induction

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1. Identified and implemented learning opportunities for others 1.2. Gave and received feedback constructively 1.3. Facilitated participation of individuals in the work of the team 1.4. Negotiated learning plans to improve the effectiveness of learning 1.5. Prepared learning plans to match skill needs 1.6. Accessed and designated learning opportunities
2. Underpinning Knowledge	2.1. Coaching and mentoring principles 2.2. Understanding how to work effectively with team members who have diverse work styles, aspirations, cultures and perspective 2.3. Understanding how to facilitate team development and improvement 2.4. Understanding methods and techniques for eliciting and interpreting feedback 2.5. Understanding methods for identifying and prioritizing personal development opportunities and options 2.6. Knowledge of career paths and competency standards in the industry
3. Underpinning Skills	3.1. Ability to read and understand a variety of texts, prepare general information and documents according to target audience; spell with accuracy; use grammar and punctuation effective relationships and conflict management 3.2. Communication skills including receiving feedback and reporting, maintaining effective relationships and conflict management 3.3. Planning skills to organize required resources and equipment to meet learning needs 3.4. Coaching and mentoring skills to provide support to colleagues 3.5. Reporting skills to organize information; assess information for relevance and accuracy; identify and elaborate on learning outcomes 3.6. Facilitation skills to conduct small group training sessions 3.7. Ability to relate to people from a range of social, cultural, physical and mental backgrounds

4. Resource Implications	The following resources **MUST** be provided: 4.1. Access to relevant workplace or appropriately simulated environment where assessment can take place 4.2. Materials relevant to the proposed activity or tasks
5. Methods of Assessment	Competency may be assessed through: 5.1. Observation of work activities of the individual member in relation to the work activities of the group 5.2. Observation of simulation and or role play involving the participation of individual member to the attainment of organizational goal 5.3. Case studies and scenarios as a basis for discussion of issues and strategies in teamwork
6. Context for Assessment	6.1. Competency may be assessed in workplace or in a simulated workplace setting 6.2. Assessment shall be observed while task are being undertaken whether individually or in-group

UNIT OF COMPETENCY : **APPLY PROBLEM SOLVING TECHNIQUES IN THE WORKPLACE**

UNIT CODE : **500311117**

UNIT DESCRIPTOR : This competency covers the knowledge, skills and attitudes required to apply the process of problem solving and other problems beyond those associated directly with the process unit. It includes the application of structured processes and improvement tools. This competency is typically performed by an experienced technician, team leader or supervisor.

ELEMENT	PERFORMANCE CRITERIA *Bold, italicized* terms are elaborated in the Range of Variables
1. Analyze the problem	1.1. Issues/concerns are evaluated based on data gathered 1.2. Possible causes of problem are identified within the *area of responsibility* as based on experience and the use of problem solving tools/analytical techniques 1.3 Possible cause statements are developed based on findings
2. Identify possible solutions	2.1 All possible options are considered for resolution of the problem in accordance with *safety* and operating procedures 2.2 Strengths and weaknesses of possible options are considered 2.3 Corrective action is determined to resolve the problem and its possible future causes
3. Recommend solution to higher management	3.1 Report/*communication* or *documentation* are prepared 3.2 Recommendations are presented to appropriate personnel 3.3 Recommendations are followed-up, if required
4. Implement solution	4.1 Measurable objectives are identified 4.2 Resource needs are identified 4.3 Timelines are identified in accordance with plan
5. Evaluate/Monitor results and outcome	Processes and improvements are identified based on evaluative assessment of problem Recommendations are prepared and submitted to superiors.

TR- Food Processing NC IV

RANGE OF VARIABLES

VARIABLE	RANGE
1. Area of responsibility	Variables may include but are limited to: 1.1. Work environment 1.2. Problem solution processes 1.3. Preventative maintenance and diagnostic policy 1.4. Roles and technical responsibilities
2. Occupational Health and Safety	2.1. As per company, statutory and vendor requirements. Ergonomic and environmental factors must be considered during the demonstration of this competency.
3. Communication	Variables may include but are not limited to: 3.1. both hand written and printed material 3.2. internal memos 3.3. electronic mail 3.4. briefing notes and 3.5. bulletin boards
4. Documentation	4.1. Audit trails 4.2. Naming standards 4.3. Version control

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1. Analyzed the problem 1.2. Identified possible solutions 1.3. Implemented solutions 1.4. Recommended solutions to higher management 1.5. Outcome evaluated/monitored Evidence of satisfactory performance in this unit can be obtained by observation of performance and questioning to indicate knowledge and understanding of the elements of the competency and performance criteria.
2. Underpinning Knowledge	2.1. Broad understanding of systems, organizational systems and functions 2.2. Broad knowledge of help desk and maintenance practices 2.3. Current industry accepted hardware and software products with broad and detailed knowledge of its general features and capabilities 2.4. Broad knowledge of the operating system 2.5. Broad knowledge of the client business domain 2.6. Broad knowledge based incorporating current industry practices related to escalation procedures 2.7. Broad knowledge based of diagnostic tools 2.8. General principles of OHS 2.8. Divisional/unit responsibilities
3. Underpinning Skills	3.1. Decision making within a limited range of options. 3.2. Communication is clear, precise and varies according to the type of audience 3.3. Teamwork in reference to personal responsibility 3.4. Time management as applied to self-management. 3.5. Analytical skills in relation to routine malfunctions. 3.6. General customer service skills displayed. 3.7. Questioning and active listening is employed to clarify general information
4. Resource Implications	4.1. Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as well as bank of questions which will be used to probe the reasoning behind the observable actions.

5. Methods of Assessment	Competency may be assessed through:
	5.1. Through direct observation of application to tasks and questions related to underpinning knowledge
	Under general guidance, checking various stages of operation and at the completion of the activity against performance criteria and specifications
6. Context for Assessment	6.1. Competency may be assessed in the work place or in a simulated work place setting
	6.2. Assessment shall be carried out through TESDA's Accredited Assessment Centers/Venues while tasks are undertaken either individually or as part of a team under limited supervision

UNIT OF COMPETENCY : COLLECT, ANALYZE AND ORGANIZE INFORMATION

UNIT CODE   **: 500311118**

UNIT DESCRIPTOR   **:** This unit covers the outcomes required to process, analyze, interpret and organize workplace information and other relevant data.

ELEMENT	PERFORMANCE CRITERIA *Bold Italicized* terms are elaborated in the Range of Variables
1. Study information requirements	1.1 Needs are identified using established ***research procedures*** 1.2 Relevant ***forms*** and recording systems are used to gather the information. 1.3 Respondents are selected to implement survey / research based on established procedures.
2. Process data	2.1 ***Data*** are collected and collated based on the prescribed method. 2.2 Relevant data are used as references in accordance with the objectives of the program. 2.3 ***Information*** is compiled according to the required form.
3. Analyze, interpret and organize information gathered	3.1 Data are analyzed using relevant ***methodologies*** 3.2 Where applicable, ***statistical analysis/methods*** are employed according to the objectives of the program 3.3 Graphs and other visual presentations are prepared to facilitate analysis / interpretation of information
4. Present findings/ recommendations	4.1 Findings/recommendations summarized and presented/packaged in user-friendly manner 4.2 Relevant inputs gathered to finalize report 4.3 Draft report prepared based on standard format. 4.4 Technical reports are submitted and disseminated to concerned offices.

RANGE OF VARIABLES

VARIABLE	R A N G E
1. Research procedures	May include but are not limited to: 1.1 TNA 1.2 Front-end analysis 1.3 Surveys 1.4 Interviews 1.5 Functional analysis 1.6 DACUM research
2. Forms	May include but are not limited to: 2.1 Survey forms/Questionnaires 2.2 Personal information/Profile 2.3 Accident report form 2.4 Requisition slip 2.5 Job orders 2.6 Purchase request form 2.7 Incident report form
3. Methodologies	3.1 Qualitative methods 3.2 Quantitative methods
4. Statistical analysis/methods	4.1. Averages (Mean, Median, Mode) 4.2. Percentage 4.3. Ranks 4.4. Frequency Distribution 4.5 Statistical test
5. Data	5.1. Raw Data
6. Information	6.1. Processed and packaged data

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate 1.1 Determined information requirements based on organizational goals and objectives. 1.2 Used relevant forms and recording systems to gather data 1.3 Processed data based on the objectives of the program 1.4 Utilized relevant research methods based on the objective of the program 1.5 Analyzed and organized information gathered 1.6 Submitted/Disseminated technical reports to concerned offices

2. Underpinning knowledge	2.1 Data processing, Information analysis and interpretation
	2.2 Research methods
	    2.2.1 Qualitative
	    2.2.2 Quantitative
	    2.2.3 Statistical
	2.3 Report writing
	2.4 Use of relevant software
	    2.4.1 Spreadsheets
	    2.4.2 Presentation graphics
	    2.4.3 Work processor
	    2.4.4 Statistical package

3. Underpinning skills	3.1 Communicating effectively 3.2 Performing research and analysis 3.3 Reading / interpreting data and information 3.4 Problem solving
4. Resource implications	The following resources **MUST** be provided: 4.1 Workplace or assessment location 4.2 Access to office equipment and facilities relevant to the unit 4.3 Case studies/scenarios
5. Methods of assessment	Competency may be assessed through: 5.1 Written/ Oral Examination 5.2 Interviews 5.3 Portfolio
6. Context for assessment	6.1 Competency may be assessed in actual workplace or TESDA Accredited Assessment Center

UNIT OF COMPETENCY :   **PLAN AND ORGANIZE WORK**

UNIT CODE   :   **500311119**

UNIT DESCRIPTOR   :   This unit covers the outcomes required in planning and organizing work. It may be applied to a small independent operation or to a section of a large organization.

ELEMENT	PERFORMANCE CRITERIA *Bold, italicized* terms are elaborated in the Range of Variables	
1. Set objectives	1.1	***Objectives*** are consistent with and linked to work activities in accordance with organizational aims
	1.2	Objectives are stated as measurable targets with clear time frames
	1.3	Support and commitment of team members are reflected in the objectives
	1.4	Realistic and attainable objectives are identified
2. Plan and schedule work activities	2.1	Tasks/work activities to be completed are identified and prioritized as directed
	2.2	Tasks/work activities are broken down into steps in accordance with set time frames achievable components in accordance with set time frames
	2.3	***Resources*** are allocated as per requirements of the activity
	2.4	***Schedule of work activities*** is coordinated with personnel concerned
3. Implement work plans	3.1	***Work methods and practices*** are identified in consultation with personnel concerned
	3.2	***Work plans*** are implemented in accordance with set time frames, resources and ***standards***
4. Monitor work activities	4.1	Work activities are monitored and compared with set objectives
	4.2	Work performance is monitored
	4.3	Deviations from work activities are reported and recommendations are coordinated with appropriate personnel and in accordance with set standards
	4.4	Reporting requirements are complied with in accordance with recommended format
	4.5	Observe timeliness of report
	4.6	Files are established and maintained in accordance with standard operating procedures

ELEMENT	PERFORMANCE CRITERIA *Bold Italicized* terms are elaborated in the Range of Variables
5. Review and evaluate work plans and activities	5.1 Work plans, strategies and implementation are reviewed based on accurate, relevant and current information 5.2 Review is based on comprehensive consultation with appropriate personnel on outcomes of work plans and reliable feedback 5.3 Results of review are provided to concerned parties and formed as the basis for adjustments/simplifications to be made to policies, processes and activities 5.4 Performance appraisal is conducted in accordance with organization rules and regulations 5.5 Performance appraisal report is prepared and documented regularly as per organization requirements. 5.6 Recommendations are prepared and presented to *appropriate personnel/authorities* 5.7 *Feedback mechanisms* are implemented in line with organization policies

RANGE OF VARIABLES

VARIABLE	RANGE	
1. Objectives	1.1. Specific 1.2. General	
2. Resources	2.1. Personnel 2.2. Equipment and technology 2.3. Services 2.4. Supplies and materials 2.5. Sources for accessing specialist advice 2.6. Budget	
3. Schedule of work activities	3.1. Daily 3.2. Work-based 3.3. Contractual 3.4. Regular	3.5. Confidential 3.6. Disclosure 3.7. Non-disclosure
4. Work methods and practices	Work methods and practices may include but not limited to: 4.1. Legislated regulations and codes of practice 4.2. Industry regulations and codes of practice 4.3. Occupational health and safety practices	
5. Work plans	5.1. Daily work plans 5.2. Project plans 5.3. Program plans 5.4. Organization strategic and restructuring plans	5.5. Resource plans 5.6. Skills development plans 5.7. Management strategies and objectives
6. Standards	6.1. Performance targets 6.2. Performance management and appraisal systems 6.3. National competency standards 6.4. Employment contracts 6.5. Client contracts 6.6. Discipline procedures 6.7. Workplace assessment guidelines 6.8. Internal quality assurance 6.9. Internal and external accountability and auditing requirements 6.10. Training Regulation Standards 6.11. Safety Standards	

TR- Food Processing NC IV

7. Appropriate personnel/authorities	Appropriate personnel include: 7.1. Management 7.2. Line Staff	
8. Feedback mechanisms	Feedback mechanisms include: 8.1. Verbal feedback 8.2. Informal feedback 8.3. Formal feedback	8.4. Questionnaire 8.5. Survey 8.6. Group discussion

TR- Food Processing NC IV

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1. Set objectives 1.2. Planned and scheduled work activities 1.3. Implemented work plans 1.4. Monitored work activities 1.5. Reviewed and evaluated work plans and activities
2. Underpinning Knowledge	2.1. Organization's strategic plan, policies rules and regulations, laws and objectives for work unit activities and priorities 2.2. Organizations policies, strategic plans, guidelines related to the role of the work unit 2.3. Team work and consultation strategies
3. Underpinning Skills	3.1. Planning 3.2. Leading 3.3. Organizing 3.4. Coordinating 3.5. Communication Skills 3.6. Inter-and intra-person/motivation skills 3.7. Presentation skills
4. Resource Implications	The following resources **MUST** be provided 4.1. Tools, equipment and facilities appropriate to the proposed activities 4.2. Materials relevant to the proposed activities 4.3. Work plan schedules 4.4. Drawings, sketches or blueprint
5. Methods of Assessment	Competency may be assessed through: 5.1. Direct observation/questioning 5.2. Practical exercises on Planning and Scheduling Work Activities 5.3. Third Party Report (collection of competency evidence)
6. Context for Assessment	6.1. Competency may be assessed in the workplace or in simulated work

COMMON COMPETENCIES

UNIT OF COMPETENCY: APPLY FOOD SAFETY AND SANITATION

UNIT CODE   **: AGR741201**

UNIT DESCRIPTOR   **:** This unit deals with the skills, knowledge and attitudes required to apply food safety and sanitation in the workplace

ELEMENT	PERFORMANCE CRITERIA *Bold italicized* terms are elaborated in the Range of Variables
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
2. Observe Personal Hygiene and Good Grooming	2.1 Personal hygiene and good grooming is practiced in line with *workplace health and safety requirements*
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.
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.
5. Implement housekeeping activities	5.1 Work area and surroundings are cleaned in accordance with workplace health and safety regulations 5.2 Waste is disposed according to organization's waste disposal system 5.3 *Hazards* in the work area are recognized and reported to designated personnel according to workplace procedures

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, ear 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 fire fighting equipment in the work area 4.3 Installation of safety signages 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. Underpinning Knowledge	2.1 Safety Practices 2.1.1 Proper waste disposal 2.1.2 Environmental protection and concerns 2.1.3 Food safety principles and practices 2.1.4 Good grooming and personal hygiene 2.2 Codes and Regulations 2.2.1 TQM and other food quality system principles 2.2.2 ISO, HACCP, EMS, 5S 2.2.3 Good Food Manufacturing Practices 2.3 Equipment: Uses and Specifications 2.3 1 Parts and functions of personal protective equipment 2.3.2 First Aid Kit 2.3.3 Sanitizing equipment
3. Underpinning Skills	3.1 Sanitary food handling practices 3.2 Implementing housekeeping activities 3.3 Applying first aid treatment 3.4 Coordination skills
4. Methods of Assessment	Competency in this unit must be assessed through: 4.1 A combination of direct observation and questioning of a candidate processing foods.
5. Resource Implications	The following resources must be provided: 5.1 Work area/station 5.2 First Aid kit 5.3 PPE relevant to the activities 5.4 Fire extinguisher 5.5 Stretcher 5.6 Materials, tools and equipment relevant to the unit of competency
6. Context of Assessment	6.1 Assessment should occur on the job or in a simulated workplace

UNIT OF COMPETENCY: USE STANDARD MEASURING DEVICES AND INSTRUMENTS

UNIT CODE : **AGR741202**

UNIT DESCRIPTOR: This unit deals with the knowledge, skills and attitudes required to use standard measuring devices, instruments in the workplace

ELEMENT	PERFORMANCE CRITERIA *Bold italicized* terms are elaborated in the Range of Variables
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
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***
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

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 but not limited to 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. Underpinning Knowledge	2.1 Safe handling of measuring devices and instruments 2.2 Specifications and functions of measuring devices and instruments 2.3 Defects and breakages of measuring devices and instruments 2.4 Procedures in cleaning, sanitizing and calibrating and stowing equipment and instruments
3. Underpinning Skills	3.1 Communication skills 3.2 Calibrating skills 3.3 Sanitary handling of devices and instruments 3.4 Measuring devices and instruments 3.5 Stowing measuring devices and instruments
4. Methods of Assessment	Competency in this unit must be assessed through: 4.1 Direct observation and questioning of a candidate using measuring devices and instruments
5. Resource Implications	The following resources must be provided: 5.1 Work area/station 5.2 Materials, tools and equipment relevant to the Unit of Competency
6. Context of Assessment	6.1 Assessment should occur on the job or in a simulated workplace

TR- Food Processing NC IV

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

UNIT CODE   : AGR741203

UNIT DESCRIPTOR: This unit deals with the skills, knowledge and attitudes required to operate food processing tools, equipment and instruments in the workplace.

ELEMENT	PERFORMANCE CRITERIA *Bold Italicized* terms are elaborated in the Range of Variables
1. Perform Pre-Operation Activities	1.1 Appropriate tools and equipment/utensils are assembled according to *food processing methods* 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
2. Operate Food Processing Equipment	2.1 Food processing equipment is switched on according to *manufacturer's specifications* 2.2 Performance of food processing equipment is checked to ensure conformity with specified output 2.1 Operation of food processing equipment is managed to achieve planned outcomes 2.2 Minor trouble shooting on food processing tools, equipment and utensils is performed when necessary
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

TR- Food Processing NC IV

RANGE OF VARIABLES

VARIABLE	RANGE
1. Food Processing Methods	Food Processing Methods include but not limited to: 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 used for the following food processing methods: 2.1 Salting 2.2 Curing 2.3 Smoking 2.4 Fermentation 2.5 Pickling 2.6 Canning 2.7 Bottling 2.8 Sugar concentration 2.9 Drying 2.10 Dehydration
3. Manufacturer's Specifications	Manufacturer's specifications may include but not limited to: 3.1 Handling requirements 3.2 Operating requirements 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. Underpinning Knowledge	2.1 Equipment, tools and instruments: Uses and Specifications
	2.2 Equipment, tools and instruments: Parts and Functions
	2.3 Sanitizing agents: Uses and Specification
	2.4 Minor preventive maintenance
	2.5 Proper stowing of tools and equipment/instruments
	2.6 Minor trouble shooting
	2.5 Interpreting manufacturer's specifications
	2.6 Equipment/machine wear and tear process
3. Underpinning Skills	3.1 Equipment/machine parts tear down and assembly
	3.2 Inspecting and checking condition of equipment/machines before, during and after operation
	3.3 Performing minor trouble shooting
	3.4 Performing minor preventive maintenance
	3.5 Reporting equipment/machine, tools, instruments breakdown and recording same in standard forms
4. Methods of Assessment	Competency in this unit must be assessed through:
	4.1 Direct observation and questioning of a candidate operating food processing tools and equipment/instruments
	4.2 Submission of written report on the performance and condition of equipment/machine, tools, instruments used.
5. Resource Implications	The following resources must be provided:
	5.1 Work area/station
	5.2 Materials, tools and equipment relevant to the Unit of Competency
6. Context of Assessment	6.1 Assessment should occur on the job or in a simulated workplace

UNIT OF COMPETENCY : PERFORM MATHEMATICAL COMPUTATIONS

UNIT CODE   **: AGR741204**

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

ELEMENT	PERFORMANCE CRITERIA *Bold italicized* terms are elaborated in the Range of Variables
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
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
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 3.2 Data on actual yields and recoveries and corresponding percentage equivalents are calculated according to enterprise requirements 3.3 All calculated data are recorded according to enterprise requirements

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

RANGE OF VARIABLES

VARIABLE	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: 1.1 Gathered the records of weights and measurements of raw materials/ingredients and finished processed products 1.2 Summarized and tabulated all raw data gathered 1.3 Calculated the production inputs and outputs 1.4 Computed the costs of production 1.5 Reviewed all formulations and concentrations of solutions according to specifications and standards of the enterprise
2. Underpinning Knowledge	2.1 Mensuration 2.2 Percentage formulation 2.3 Fraction, ratios and proportions 2.3 Basic Mathematical Operations 2.4 Conversion factors
3. Underpinning Skills	3.1 Basic Mathematical skills 3.2 Basic Accounting skills 3.3 Recording skills 3.4 Data Gathering skills
4. Methods of Assessment	Competency in this unit must be assessed through: 4.1 A combination of direct observation and questioning of a candidate computing costs of production 4.2 Submission of a written report showing a record of production data including raw data
5. Resource Implications	The following resources should be provided: 5.1 Work area/station 5.2 Materials relevant to recording and documentation of production data 5.3. Computer with printer and software 5.4 Calculator 5.5 Work table
6. Context of Assessment	6.1 Assessment should occur on the job or in a simulated workplace

UNIT OF COMPETENCY: IMPLEMENT GOOD MANUFACTURING PRACTICE AND PROCEDURES

UNIT CODE : AGR741205

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

ELEMENT	PERFORMANCE CRITERIA *Bold, italicized terms* are elaborated in the Range of Variables
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
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
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 standards

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
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
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

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. 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. Underpinning Knowledge and	2.1. The role of GMP in preventing contamination, its relationship to legislative responsibilities and potential

Attitudes	implications of non-compliance
	2.2. GMP arrangements in the workplace. This includes awareness of relevant GMP codes of practice and related workplace policies and procedures to implement these responsibilities
	2.3. The relationship between GMP and the quality system, personnel responsible for designing and managing GMP, personal role to maintain GMP, the role of internal and external auditors as appropriate
	2.4. Procedures followed to investigate contamination events and performance improvement processes
	2.5. Personal clothing and footwear requirements for working in and/or moving between work areas
	2.6. Personal clothing use, storage and disposal requirements
	2.7. Awareness of common micro biological, physical and chemical contaminants relevant to the work process. This includes the types of contamination likely to occur, the conditions under which they occur, possible consequences and control methods to prevent occurrence
	2.8. Basic concepts of quality assurance including quality specifications, operating parameters, validation procedures and control methods. This includes an understanding of related documentation including Standard Operating Procedures and/or batch instructions
	2.9. Control methods and procedures used in the work area to maintain GMP. This includes an understanding of the purpose of control, the consequences if not controlled and the method of control where relevant. It may include an understanding of methods used to monitor process control; purpose and requirements of validation procedures; and purpose of equipment calibration
	2.10. GMP responsibilities and requirements relating to work role
	2.11. Basic understanding of the properties, handling and storage requirements of raw materials, packaging components and final product handled and used
	2.12. Standards for materials, equipment and utensils used in the work area

	2.13. Recall and traceability procedures relevant to work role
	2.14. Procedures for responding to out-of-specification or unacceptable performance/outcomes. This includes procedures for identifying or isolating materials or product of unacceptable quality
	2.15. Purpose of keeping records and the recording requirements of GMP. This includes an understanding of product and materials traceability procedures
	2.16. Housekeeping requirements and responsibilities relating to own work. Where relevant this includes use and storage of housekeeping/cleaning equipment
	2.17. Waste collection, recycling and handling procedures relevant to own work responsibilities
	2.18. Responsibilities for reporting and recording quality information
3. Underpinning Skills	3.1. Planning and organizing work (time management)
	3.2. Working with others and in teams
4. Resource Implication	The following resources should be provided:
	4.1. Workplace location and access to workplace policies
	4.2. Materials relevant to the proposed activity and tasks
5. Methods of Assessment	Competency in this unit must be assessed using at least two (2) of the following methods:
	5.1. A combination of direct observation and oral questioning
	5.2. Written report
	5.3. Written Test
	5.4. Portfolio
6. Context of Assessment	Assessment should occur on the job or in a simulated workplace

UNIT OF COMPETENCY: IMPLEMENT ENVIRONMENTAL POLICIES AND PROCEDURES

UNIT CODE   : AGR741206

UNIT DESCRIPTOR: This unit deals with the skills, knowledge and attitudes required to implement environmental policies and procedures when carrying out work responsibilities

ELEMENT	PERFORMANCE CRITERIA *Bold, italicized terms* are elaborated in the Range of Variables
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
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 a participative arrangements for managing environmental issues in the workplace within workplace procedures and level of responsibility

| 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 |

TR- Food Processing NC IV

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. OHS 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

TR- Food Processing NC IV

	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.
	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. Underpinning Knowledge and Attitudes	2.1. Workplace approach to managing environmental issues. This includes awareness of relevant work procedures, personnel responsible for environmental issues, consultative arrangements for reporting and improving environmental practices and may include an understanding of the role of internal and external auditors as appropriate
	2.2. Responsibilities of self and employer to manage environmental issues on site. This includes an awareness of any license or agreements in place with

	resource management authorities and the purpose of these arrangements
	2.3. Sources of advice on environmental issues in the workplace
	2.4. Environmental hazards and risks associated with the work carried out. Examples may include water pollution, air pollution, noise, waste handling, emergencies such as spills, and hazardous chemicals or waste
	2.5. Work procedures as they relate to environmental responsibilities. This includes use of appropriate personal protective clothing and equipment as required
	2.6. Procedures used to prevent or control environmental risks associated with own work. Where this requires use of emergency equipment, this includes understanding the purpose, capacity and limitations of equipment, location and storage requirements and safe handling and equipment use
	2.7. Basic concepts of hazard identification, risk assessment and control options. This includes an understanding of the hierarchy of hazard control
	2.8. Workplace procedures for identifying and responding to hazards, investigating incidents and improving environmental management and resource utilisation
	2.9. Impact of work practices on resource utilisation and wastage
	2.10. Procedures used to handle and dispose of waste according to workplace requirements. This includes an awareness of the need to separate solid and liquid waste, and remove waste in solid form rather than hosing down drains. It may also include an understanding of handling requirements for hazardous waste
	2.11. The difference between trade waste and storm water drains
	2.12. Consequences of inappropriate waste handling and disposal
	2.13. Procedures for responding to unplanned incidents such as spills and leaks as relevant to the work area
	2.14. Emergency response system and procedures
	2.15. Responsible use of resources in own work area

	2.16. Reporting procedures and responsibilities
	2.17. Consultative processes in the workplace for raising issues/suggestions on environmental issues
3. Underpinning Skills	3.1. Planning and organizing work (time management)
	3.2. Working with others and in teams
4. Resource Implication	The following resources should be provided:
	4.1. Workplace location and access to workplace policies
	4.2. Materials relevant to the proposed activity and tasks
5. Methods of Assessment	Competency in this unit must be assessed using at least two (2) of the following methods:
	5.1. A combination of direct observation and oral questioning
	5.2. Written report
	5.3. Written Test
	5.4. Portfolio
6. Context of Assessment	Assessment should occur on the job or in a simulated workplace

UNIT OF COMPETENCY: MONITOR THE IMPLEMENTATION OF GOOD MANUFACTURING PRACTICE PROCEDURES

UNIT CODE   : AGR741208

UNIT DESCRIPTOR: This unit deals with the skills, knowledge and attitudes required to provide direction in the day-to-day implementation of Good Manufacturing Practices (GMP) in a work area. It includes supporting others to implement the requirements of GMP and applies to those with formal responsibility for others as well as to those required to model workplace policies and procedures but who have no formal management role.

ELEMENT	PERFORMANCE CRITERIA **Bold, italicized terms** are elaborated in the Range of Variables
1. Ensure others in the work area are able to meet GMP requirements	1.1 ***Relevant clothing and equipment*** appropriate to work requirements is confirmed as available, functional and correctly fitted according to GMP requirements
	1.2 Advice on GMP responsibilities and procedures is confirmed to be accessible and clearly explained
	1.3 ***GMP control measures*** used in the work area are checked if these can be identified by those in the work area according to GMP and workplace procedures
	1.4 Mentoring and coaching support is confirmed as available to support individuals/groups to implement GMP and related procedures
	1.5 Training needs are identified and addressed within level of responsibility
2. Monitor personal hygiene and conduct of team members in the work area	2.1 ***Personal hygiene*** of work team is confirmed to meet 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 is monitored to comply with area entry and exit procedures
3. Monitor implementation of GMP requirements in the work area	3.1 GMP procedures in the work area are checked to be clearly defined, documented and followed
	3.2 Non-compliance from identified procedures is reported and addressed within level of responsibility
	3.3 Personal behavior is seen as consistent with workplace

	policies and procedures that support GMP 3.4 Workplace procedures to control resource allocation and process are followed to meet GMP requirements 3.5 GMP non-conformance is identified and reported according to workplace procedure 3.6 GMP information is recorded to meet workplace reporting requirements 3.7 The workplace is maintained in a clean and tidy order to meet GMP housekeeping standards
4. Contribute to validation processes	4.1 Validation practices and procedures are reviewed in consultation with relevant personnel 4.2 Validation results and issues are identified and corrective action taken within level of responsibility 4.3 Documentation and recording requirements are validated to meet GMP code and company requirements
5. Take corrective action in response to GMP non-compliance	5.1 Processes, practices or conditions which could result in non-compliance with GMP are identified and reported according to workplace reporting requirements 5.2 Corrective action is taken in accordance with the levels of responsibility 5.3 GMP issues are raised with designated personnel
6. Maintain and improve GMP in the work area	6.1 Matters raised relating to GMP are promptly resolved and/or referred to appropriate personnel 6.2 Effectiveness of control measures are monitored within level of responsibility 6.3 Others in the work area are advised of GMP matters relevant to work role 6.4 Changes to documentation are proposed in accordance with workplace procedures to maintain GMP 6.5 GMP audits are conducted to meet company and *legislative requirements* 6.6 Action is taken to respond to audit recommendations within level of responsibility

RANGE OF VARIABLES

VARIABLE	RANGE
1 Relevant clothing and equipment	Clothing and equipment may include but not limited to: 1.1 Apron/laboratory gown 1.2 Mouth masks 1.3 Gloves 1.4 Rubber boots 1.5 Head gears such as caps, hairnets, ear plug 1.6 Laboratory equipment 1.7 Foot baths 1.8 Cleaning and disinfecting equipment and materials
2 GMP control measures	GMP measures may cover but is not limited to: 2.1 Grounds 2.2 Plant construction and design 2.3 Equipment 2.4 Sanitation and hygiene 2.5 Production and process controls 2.6 Quality control 2.7 Documentation 2.8 Warehousing and distribution 2.9 Product recall 2.10 Integrated Pest management
3 Personal hygiene	Personal hygiene may involve but is not limited to: 3.1 Disease control 3.2 Wearing suitable outer garment including work shoes 3.3 Personal cleanliness 3.4 Hand washing and sanitizing 3.5 Removing unsecured jewelry and other objects 3.6 Maintaining gloves 3.7 Wearing hairnets, headbands, caps, beard cover, or other effective hair restraints 3.8 Storage of clothing and other personal belongings 3.9 Confining things to other areas e.g. gum, beverages, eaten food, tobacco 3.10 Protection against contamination of food with perspiration, saliva, hair, cosmetics, tobacco, chemicals, and medicines applied to skin
4 Legislative requirements	Legislative requirements relevant to this industry include but not limited to: 4.1 Good Manufacturing Practice (GMP) codes 4.2 BFAD issuances and orders 4.3 FPA issuances and orders 4.4 Labeling, weights and measures legislation 4.5 Legislation covering environmental management 4.6 Occupational health and safety

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate:
	1.1 Communicated information about GMP requirements and related procedures to others in the work area
	1.2 Provided access to GMP documentation
	1.3 Modeled personal conduct and work activities to meet requirements of GMP and supported others to follow
	1.4 Identified control points in work area and demonstrated monitoring techniques used and supported others to do the same
	1.5 Determined appropriate action required and ensured timely action is taken to respond to GMP non-compliance within level of responsibility
	1.6 Participated in consultation processes to improve GMP
	1.7 Participated in and/or reviewed practices and procedures to prevent or minimize the likelihood of unacceptable performance
	1.8 Ensured that housekeeping standards are maintained and that equipment is in operational order
	1.9 Monitored the recording of GMP information to confirm that records accurately reflect performance and meet the requirements of the workplace and legislation
2. Underpinning Knowledge and Attitudes	2.1 GMP's role in preventing contamination, its relationship to legislative responsibilities and potential implications of non-compliance
	2.2 GMP arrangements in the workplace
	2.3 Current technical and process knowledge required to monitor GMP and participate in investigating GMP non-compliance within level of responsibility
	2.4 Control methods and procedures used in the work area to maintain GMP
	2.5 Basic principles of integrated pest management
	2.6 Basic concepts of quality assurance including quality specifications, operating parameters, validation procedures and control methods
	2.7 The relationship between GMP and the quality system, personnel responsible for designing and managing GMP, personal role to maintain GMP, the role of internal and external auditors as appropriate
	2.8 Procedures followed to investigate contamination events and performance improvement processes
	2.9 Clothing and footwear requirements for working in and/or moving between work areas
	2.10 Purpose and requirements of validation procedures and purpose of equipment calibration
	2.11 Recall and traceability procedures relevant to work area

	2.12 Properties, handling and storage requirements of raw materials, packaging components and final product handled and used in the work area
	2.13 Standards for materials, equipment and utensils used in the work area
	2.14 Procedures for responding to out-of-specification or unacceptable performance/outcomes
	2.15 Waste collection, recycling, handling and disposal
	2.16 Attitudes in the workplace should include
	    2.16.1 Time conscious
	    2.16.2 Cost conscious
	    2.16.3 Environmental and pollution conscious
	    2.16.4 Flexible/adaptable
	    2.16.5 Honest
	    2.16.6 Innovative
	    2.16.7 Alert
	    2.16.8 Systematic and organized
	    2.16.9 Committed
	    2.16.10 Creative
	    2.16.11 Resourceful

3. Underpinning Skills	3.1 Appropriate communication skills and techniques to convey information appropriate to audience 3.2 Use and storage of housekeeping/cleaning equipment 3.3 Calibration skills 3.4 Basic computer skills 3.5 Basic mathematical skills 3.6 Record keeping and documentation skills 3.7 Sanitary food handling practices
4. Methods of Assessment	Competency in this unit must be assessed through: 4.1 Direct observation/demonstration with oral questioning 4.2 Written test 4.3 Portfolio
5. Resource Implications	The following resources must be provided: 5.1 Specific work area/station 5.2 Equipment, tools and utensils to be monitored 5.3 Products/materials handled and stored which include raw materials, packaging components and consumables, semi-processed product, finished product and cleaning materials 5.4 Materials relevant to the proposed activity
6. Context of Assessment	6.1 Assessment should occur on the job or in a simulated workplace.

UNIT OF COMPETENCY: MONITOR THE IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT POLICIES

UNIT CODE : AGR741209

UNIT DESCRIPTOR: This unit deals with the skills, knowledge and attitudes required to provide direction in the day-to-day implementation of environmental management policies and procedures in a work area. It applies to those with formal responsibility for others as well as to those required to model workplace policies and procedures but who have no formal management role.

ELEMENT	PERFORMANCE CRITERIA **Bold, italicized terms** are elaborated in the Range of Variables
1. Ensure others in the work area are able to implement environmental work practices	1.1 Hazard control and ***personal protective clothing and equipment*** appropriate to work requirements is confirmed as available and functional
	1.2 Information on environmental policies, procedures and programs is checked to be current, accessible and communicated to others in the work area
	1.3 Information about identified hazards and the outcomes of risk assessment and risk control procedures is confirmed as accessible and communicated to others in the work area
	1.4 ***Environmental hazards*** and control measures relating to work responsibilities are verified to be identifiable by those in the work area
	1.5 Mentoring and coaching support is made available to support individuals/groups to implement procedures to support environmental management
	1.6 Training needs are identified and addressed within level of responsibility
2. Monitor observance of work procedures	2.1 Work procedures in the work area are clearly defined, documented and followed
	2.2 Deviation from identified procedures is identified, reported and addressed within level of responsibility
	2.3 Personal behavior is monitored to be consistent with workplace policies and procedures
	2.4 Environmental hazards in the work area are identified,

		measured and reported according to workplace procedure
	2.5	Environmental information is recorded to meet workplace reporting requirements
	2.6	Housekeeping standards in the work area are maintained
3. Implement emergency procedures to respond to hazardous events	3.1	Workplace procedures for dealing with hazardous events are promptly implemented as required
	3.2	Hazardous events are investigated to identify cause
	3.3	Control measures to prevent recurrence and minimize risks of hazardous events are implemented
4. Maintain and improve environmental management in the work area	4.1	Potential hazards are identified, assessed, removed or and/reported within level of responsibility and according to workplace procedure
	4.2	Risk assessments are conducted and appropriate control measures are identified and implemented according to workplace risk management procedures
	4.3	Recommendations arising from risk assessments are implemented within level of responsibility
	4.4	Inadequacies in control measures are identified and reported according to workplace reporting requirements
	4.5	The work group is consulted and advised of environmental matters relevant to work role
	4.6	Matters raised relating to environmental issues are promptly resolved or referred to the appropriate personnel
	4.7	Opportunities for improving environmental performance are identified and raised with relevant personnel
	4.8	Procedures are developed or revised to support effective control of environmental hazards
	4.9	Environmental management information is recorded according to workplace reporting requirements

RANGE OF VARIABLES

VARIABLE	RANGE
1 Personal protective clothing and equipment	Personal protective clothing and equipment may include but not limited to: 1.1 Apron/laboratory gown 1.2 Beard cover 1.3 Mouth masks 1.4 Gloves 1.5 Rubber boots 1.6 Head gears such as caps, hairnets, headband, ear plug
2 Environmental Hazards	An environmental hazard may include but not limited to any: 2.1 Activity 2.2 Product 2.3 Service which has the potential to affect the environment

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate:
	1.1 Communicated information about environmental management and related procedures to others in the work area
	1.2 Provided access to and maintained current environmental management information in the work area
	1.3 Modeled work policies and procedures to support environmental management in own work
	1.4 Identified environmental hazards and controls relevant to work processes and practices in the work area
	1.5 Monitored responsible resource utilization in the work area, consistent with company policies
	1.6 Supported others to follow environmental management procedures
	1.7 Identified, reported and/or addressed environmental management training and development needs of others in the work area
	1.8 Ensured that work and waste collection, treatment, recycling or disposal is conducted to meet environmental obligations
	1.9 Ensured that appropriate and timely action is taken in response to emergencies
	1.10 Participated in investigations of non-compliance and risk assessment processes
	1.11 Participated in consultation processes to improve environmental management in the workplace
	1.12 Responded to environmental hazard identification and hazardous incidents in an appropriate and timely way
	1.13 Reviewed practice and procedures to implement recommendations arising from risk assessments and/or improvement proposals within level of responsibility
	1.14 Ensured that housekeeping standards are maintained and that equipment is safe to operate
	1.15 Ensured that environmental records and documentation is accurate, complete and timely
2. Underpinning Knowledge and Attitudes	2.1 Workplace approach to managing environmental issues
	2.2 Responsibilities of self and employer to manage environmental issues on site.
	2.3 Legal responsibilities including awareness of any licenses or agreements in place with resource management authorities
	2.4 Principles of environmental management including energy and resources conservation and control of environmental hazards and risks

TR- Food Processing NC IV

	2.5 Principles of risk management including hazard identification, risk assessment and risk control according to hierarchy of control
	2.6 Environmental hazards and control methods associated with work activities and those specifically used in the work area.
	2.7 Safety hazards related to environmental management procedures
	2.8 Work activities that support environmental management including any covered by special training requirements
	2.9 Consultation mechanisms and responsibilities
	2.10 Emergency response system, procedures and personnel
	2.11 Attitudes in the workplace should include
	    2.11.1 Time conscious
	    2.11.2 Cost conscious
	    2.11.3 Environmental and pollution conscious
	    2.11.4 Flexible/adaptable
	    2.11.5 Honest
	    2.11.6 Innovative
	    2.11.7 Alert
	    2.11.8 Systematic and organized
	    2.11.9 Committed
	    2.11.10 Creative
	    2.11.11 Resourceful

3. Underpinning Skills	3.1 Appropriate communication skills and techniques to convey information on environmental issues to others in the workplace 3.2 Calibrating skills 3.3 Basic computer skills 3.4 Facilitating consultation processes 3.5 Record keeping and documentation skills
4. Methods of Assessment	Competency in this unit must be assessed through: 4.1 Direct observation/Demonstration with oral questioning 4.2 Written test 4.3 Portfolio
5. Resource Implications	The following resources must be provided: 5.1 Specific work area/station 5.2 Equipment and tools 5.3 Materials relevant to the proposed activity
6. Context of Assessment	6.1 Assessment should occur on the job or in a simulated workplace.

CORE COMPETENCIES

UNIT OF COMPETENCY: APPLY RAW MATERIALS/INGREDIENTS AND PROCESS KNOWLEDGE

UNIT CODE   : **AGR741323**

UNIT DESCRIPTOR: This unit deals with the skills, knowledge and attitudes required to apply understanding of raw materials/ingredients and processes to solve/remedy basic problems in preparation, processing and/or packaging product. This unit is appropriate in solving problems over one or more processes and needs knowledge of raw materials/ingredients characteristics and processing methods used.

ELEMENT	PERFORMANCE CRITERIA *Bold, italicized terms* are elaborated in the Range of Variables
1. Identify and respond to non-conforming ingredients/raw materials	1.1 Non-conformance in ***raw materials/ingredients*** is identified and reported according to workplace reporting requirements and standards
	1.2 Causes of non-conformance are investigated and reported according to workplace reporting requirements
	1.3 Corrective action is determined and implemented within level of responsibility and workplace procedures
	1.4 Action is taken to prevent reoccurrence of non-conformance according to workplace procedures
	1.5 Action taken is reported according to workplace reporting requirements
	1.6 ***Disposition*** of non-conforming ingredients and raw materials is undertaken according to workplace policies and procedures
2. Identify and respond to non-conforming product and processes	2.1 ***Processing parameters***, stages and changes which occur during ***processing*** are monitored according to specifications and workplace requirements
	2.2 Non-conformance in processing, handling and/or storage is identified and corrective action taken according to workplace requirements
	2.3 Causes of non-conformance relating to processing, handling and/or storage are investigated and reported according to workplace reporting requirements
	2.4 Corrective action is determined and implemented within

	level of responsibility and workplace procedures
	2.5 Action is taken to prevent reoccurrence of non-conformance
	2.6 Action taken is reported according to workplace reporting requirements
	2.7 *Disposition* of non-conforming products is undertaken according to workplace procedures

RANGE OF VARIABLES

VARIABLE	RANGE
1. Raw materials/ ingredients.	Raw materials/ingredients may include any one but not limited to: 1.1 Fruits and vegetables 1.2 Cereals and starches 1.3 Fish and other marine products 1.4 Meat and Poultry 1.5 Fats and oil 1.6 Sugars and sweeteners 1.7 Condiments 1.8 Sauces 1.9 Seasonings 1.10 Processing Aids 1.11 Preservatives 1.12 Packaging materials
2. Disposition	Disposition may include but not limited to: 2.1 Hold 2.2 Segregate 2.3 Sort 2.4 Reject
3. Processing parameters	Processing parameters in this Unit of Competency include but are not limited to: 3.1 Temperature 3.2 Time 3.3 Pressure 3.4 Flow rate 3.5 Moisture content 3.6 Water activity 3.7 pH
4 Processing	Processing and related methods involved in this Unit of Competency include but are not limited to: 4.1 Raw materials/ingredient Dispensing 4.2 Raw materials/ingredient Preparation 4.3 Raw materials/ingredient Mixing and blending 4.4 Raw materials/ingredient Conditioning 4.5 Primary and further processing 4.6 Wrapping 4.7 Packing 4.8 Storage and handling

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Identified requirements of ingredient/raw material characteristics within level of responsibility 1.2 Followed procedures to identify, remove/isolate and report non-conforming ingredients/materials and/or product according to workplace reporting requirements 1.3 Determined likely causes of non-conformance of ingredients/raw materials 1.4 Recognized indicators of unacceptable or non-conforming processing, handling and/or storage outcomes 1.5 Acted promptly to identify, remove/isolate and report non-conforming product and/or processes 1.6 Accessed and applied workplace information relating to process troubleshooting 1.7 Investigated non-conformance to determine likely causes and reported findings to appropriate personnel 1.8 Identified action required to correct non conformance and implement within level of responsibility 1.9 Identified action required to prevent or minimize and control reoccurrence of non-conformance and implement within level of responsibility 1.10 Completed workplace records including reporting non-conformance and documenting corrective actions according to workplace recording procedures

2. Underpinning Knowledge and Attitudes	2.1 Basic composition and function of each main material/ingredient used
	
	2.2 Awareness of ingredient standards, grades or types
	
	2.3 Common causes of contamination/unacceptable quality of raw materials/ ingredients
	
	2.4 The changes and reactions that occur through processing stages.
	
	2.5 The effect of variation in raw materials/ingredients on processing stages and final product outcome.
	
	2.6 Basic food microbiology
	
	2.7 Appropriate handling and storage requirements for raw materials/ingredients and final product and the effect of failing to meet required storage conditions
	
	2.8 Methods used to confirm quality standard.
	
	2.9 Factors that affect the shelf life of product
	
	2.10 Attitudes in the workplace should include
	    2.10.1 Punctual/Time conscious
	    2.10.2 Cost conscious
	    2.10.3 Environmental and pollution conscious

	2.10.4 Flexible/adaptable 2.10.5 Dependable 2.10.6 Innovative 2.10.7 Alert 2.10.8 Systematic and organized 2.10.9 Good listener and fast learner 2.10.10 Creative 2.10.11 Resourceful 2.10.12 Self–starter 2.10.13 Decisive	
3. Underpinning Skills	3.1 Identifying and isolating non-conforming product 3.2 Troubleshooting techniques 3.3 Amend or introduce a new method or procedure 3.4 Recording and reporting skills 3.5 Test methods to confirm raw material/ingredient and/or final product quality characteristics	
4. Methods of Assessment	Competency in this unit must be assessed through: 4.1 Direct observation/Demonstration with oral questioning 4.2 Written test 4.3 Portfolio	
5. Resource Implications	The following resources must be provided: 5.1 Specific work area/station 5.2 Equipment, tools and utensils to be prepared 5.3 Fruits, vegetables, fish/other marine products, meat, poultry and eggs for processing 5.4 Materials relevant to the proposed activity	
6. Context of Assessment	6.1 Assessment should occur on the job or in a simulated workplace.	

**UNIT OF COMPETENCY: MAINTAIN FOOD SAFETY WHEN LOADING,
UNLOADING. AND TRANSPORTING FOOD**

UNIT CODE : **AGR741324**

UNIT DESCRIPTOR: This unit deals with the skills, knowledge and attitudes required to load and transport food ingredients and products considering the food safety aspects of loading and transporting food where the transport operator does not have direct physical contact with food.

ELEMENT	PERFORMANCE CRITERIA *Bold, italicized terms* are elaborated in the Range of Variables
1. Prepare to transport food	1.1 ***Food storage vehicles*** and ***containers/receptacles*** are checked/inspected for appropriateness for use according to workplace procedures
	1.2 Food storage vehicles and containers/receptacles are prepared for use according to workplace procedures
	1.3 Food is loaded and secured as required, to meet transportation and temperature control requirements
	1.4 Hand washing and disinfecting procedures are followed to meet ***workplace requirements***
2. Load, unload, and transport food safely	2.1 ***Food safety control*** measures are monitored to ensure that food safety is maintained during transport following workplace procedures
	2.2 Where food safety control requirements are not met, the incident is promptly reported and corrective action is taken according to workplace requirements
	2.3 Food is unloaded as required according to transportation and temperature control requirements
	2.4 ***Other factors*** that can influence spoilage and contamination during transport are checked and monitored according to workplace procedures
	2.5 Food safety information is recorded to meet workplace requirements

RANGE OF VARIABLES

VARIABLE	RANGE
1 Food storage vehicles	Food storage vehicles may include but not limited to: 1.1 Reefer vans 1.2 Close vans 1.3 Container vans 1.4 Cargo trucks
2 Containers/ receptacles	Containers/receptacles involved in this Unit of Competency may include but not limited to: 2.1 Crates (plastic or wooden) 2.2 Sacks (plastic, red mesh, jute) 2.3 Boxes 2.4 Drums 2.5 Bulk handling system
3 Workplace requirements	Workplace requirements may include: 3.1 Company policies and procedures 3.2 Licensing requirements – regulatory 3.3 Legislative requirements – legal or statutory 3.4 Industrial awards and agreements 3.5 GMP 3.6 Food safety program 3.7 Product handling specifications 3.8 Transport schedules and instructions 3.9 Transport vehicle manufacturers' advice
4 Food safety control	Food safety controls refer to methods used to control food safety hazards which may include but not limited to: 4.1 Hand washing 4.2 Disinfecting 4.3 Cleaning 4.4 Sanitation
5 Other factors	Other factors that can influence spoilage and contamination may include: 5.1 Humidity 5.2 Exposure to air 5.3 Ventilation 5.4 Temperature 5.5 Stacking arrangements 5.6 Design of vehicles 5.7 Pests

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate:
	1.1 Determined food handling and transport requirements
	1.2 Confirmed that the vehicle and associated equipment is appropriate and ready for use.
	1.3 Prepared transport containers which involves checking cleaning records
	1.4 Prepared the storage/holding environment as required and confirmed that temperature parameters for the loading and unloading areas are met.
	1.5 Followed loading/unloading procedures for food in correct sequence and configuration to prevent contamination
	1.6 Monitored temperature parameters and related food safety control points before, during and after transporting food and record information in the required format
	1.7 Took appropriate corrective action in response to failure to meet temperature parameters or other food safety requirements as required by workplace procedures
	1.8 Selected and used personal protective clothing and/or equipment
2. Underpinning Knowledge and Attitudes	2.1 Understanding of food safety control points in the loading/unloading and transportation of food materials and product and related methods of control
	2.2 Characteristics and nature of food transported and related transport environment requirements
	2.3 Micro-biological, physical and chemical hazards that can occur when loading, transporting and unloading food
	2.4 Methods and procedures used to control food safety hazards
	2.5 Procedures used to confirm that transportation and related food safety equipment is appropriate for use and operational
	2.6 Food safety while in storage
	2.7 Attitudes in the workplace should include
	2.7.1 Punctual/Time conscious
	2.7.2 Cost conscious
	2.7.3 Environmental and pollution conscious
	2.7.4 Flexible/adaptable
	2.7.5 Honest
	2.7.6 Dependable
	2.7.7 Innovative
	2.7.8 Alert
	2.7.9 Systematic and organized
	2.7.10 Committed

	2.7.11 Good listener and fast learner 2.7.12 Creative 2.7.13 Resourceful 2.7.14 Self–starter	
3. Underpinning Skills	3.1 Cleaning and sanitizing food containers 3.2 Inspection and monitoring skills 3.3 Recording and reporting skills 3.4 Sanitary food handling practices	
4. Methods of Assessment	Competency in this unit must be assessed through: 4.1 Direct observation/Demonstration with oral questioning 4.2 Written test 4.3 Portfolio	
5. Resource Implications	The following resources must be provided: 5.1 Specific work area/station 5.2 Vehicles, equipment and tools for loading/unloading and transport 5.3 Fruits, vegetables, fish/other marine products, meat, poultry and eggs to be transported 5.4 Materials relevant to the proposed activity	
6. Context of Assessment	6.1 Assessment should occur on the job or in a simulated workplace.	

UNIT OF COMPETENCY: PARTICIPATE IN SENSORY ANALYSIS

UNIT CODE : AGR741325

UNIT DESCRIPTOR: This unit deals with the skills, knowledge and attitudes required to participate in sensory analysis.

ELEMENT	PERFORMANCE CRITERIA *Bold, italicized terms* are elaborated in the Range of Variables
1. Conduct sensory analysis	1.1. Samples are analyzed according to workplace procedure and ***sensory analysis*** criteria 1.2. Defects or abnormalities in sample are identified and reported
2. Report results of sensory analysis	2.1. Results are recorded according to workplace recording requirements 2.2. Reports are submitted to appropriate personnel for action

RANGE OF VARIABLES

VARIABLE	RANGE
1 Sensory analysis	Sensory analysis is applied to materials/ingredients and/or final products to be analyzed for attributes which may include 1.1 Appearance 1.2 Aroma/Fragrance/Odor 1.3 Flavor 1.4 Consistency and Texture 1.5 Noise

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Participated in the conduct of sensory analysis 1.2 Ensured that personal conduct does not jeopardize analytical ability 1.3 Followed procedures to analyze samples provided 1.4 Recorded and/or reported results of analysis

2. Underpinning Knowledge and Attitudes	2.1 Principles of sensory analysis, including personal conduct and test environment
	 2.2 Sensory analysis system and procedures
	 2.3 Specific criteria used to evaluate material/product samples and the associated descriptions
	 2.4 Sample preparation requirements
	 2.5 Physical condition required to conduct sensory analysis
	 2.6 The effect of personal conduct on analytical ability
	 2.7 Requirements of the environment appropriate to conducting sensory analyses
	 2.8 Physico-chemical and micro analyses as parallel tests to sensory evaluation for safety of evaluators and validation/analysis of sensory results
	 2.9 Attitudes in the workplace should include
	     2.9.1 Time conscious
	     2.9.2 Honest
	     2.9.3 Dependable
	     2.9.4 Innovative
	     2.9.5 Alert
	     2.9.6 Systematic and organized
	     2.9.7 Committed
	     2.9.8 Good listener and fast learner
	     2.9.9 Creative
	     2.9.10 Resourceful

3. Underpinning Skills	3.1 Sensory skills 3.2 Recording and reporting skills
4. Methods of Assessment	Competency in this unit must be assessed through: 4.1 Direct observation/Demonstration with oral questioning 4.2 Written test 4.3 Portfolio
5. Resource Implications	The following resources must be provided: 5.1 Specific work area/station/test room 5.2 Equipment, tools and utensils for sample preparation 5.3 Samples of a range of products for sensory analysis 5.4 Materials relevant to the proposed activity
6. Context of Assessment	6.1 Assessment should occur on the job or in a simulated workplace/test room

UNIT OF COMPETENCY: SET UP AND OPERATE PROCESSES IN A PRODUCTION/PACKAGING SYSTEM

UNIT CODE   : AGR741326

UNIT DESCRIPTOR: This unit deals with the skills, knowledge and attitudes required to set up a production/packaging system for operation, operate and monitor the system, handover the operation when needed, shut it down at the end of a production day or shift, and contribute to the continuous improvement of the system.

ELEMENT	PERFORMANCE CRITERIA *Bold, italicized terms* are elaborated in the Range of Variables
1. Set up production/ packaging system for operation	1.1 ***Equipment, related accessories, tools, and utilities*** are confirmed and available to meet production/ packaging requirements
	1.2 Cleaning requirements and equipment status is identified and confirmed according to workplace procedures
	1.3 Machine settings are selected or adjusted as required to meet safety and production/packaging requirements
	1.4 Processing/operating parameters are entered as required to meet production/packaging requirements
	1.5 ***Materials, ingredients and/or product*** are loaded or positioned as required to meet production requirements
	1.6 ***Pre-start checks*** are carried out as required by workplace requirements
	1.7 Equipment performance is checked and adjusted as required to meet production/packaging requirements
	1.8 Equipment is made ready and safe to operate and relevant personnel notified of set up completion
2. Operate and monitor the system	2.1 The system is started up and operated according to company procedures
	2.2 System equipment components are monitored to identify variation in operating conditions
	2.3 Variation in equipment operation is identified and maintenance requirements are reported according to workplace reporting requirements

		2.4	The production/packaging system is monitored to confirm that specifications and stock levels of materials and ingredients are met
		2.5	Out-of-specification product/process/packaging outcomes are identified, rectified and/or reported to maintain the process within specification
		2.6	The workplace is maintained to meet housekeeping standards
3.	Use re-order procedures to maintain stock levels	3.1	Stock level maintenance requirements are followed in accordance with workplace policies and procedures
		3.2	*Data* is accurately entered and extracted from the *inventory/records system* using appropriate workplace procedures
4.	Organize cyclical stock counts and report variances	4.1	Schedule for cyclical stock count is planned and work allocated to team members
		4.2	Clear directions on task to be performed are given
		4.3	Stock inventory is conducted in accordance with workplace procedures
		4.4	Types and causes of records discrepancies are identified
		4.5	Minor discrepancies are noted and corrected according to workplace procedures
		4.6	Major discrepancies are reported in accordance with workplace procedures
		4.7	Workplace documentation is completed
5.	Handover production/ packaging system operation	5.1	Workplace records are maintained according to workplace recording requirements
		5.2	Handover is carried out according to workplace procedures
		5.3	Process operators are made aware of system and related equipment status at completion of handover as per reporting requirements
6.	Shut down the production/ packaging system	6.1	The appropriate shut down procedure is identified
		6.2	The system is shut down according to workplace procedures
		6.3	Maintenance requirements are identified and reported
7.	Contribute to the continuous improvement of the production/ packaging	7.1	System performance is reviewed against output plan/targets
		7.2	Opportunities for system improvement are identified and investigated

| system | 7.3 Proposals for improvement are developed and implemented within company planning arrangements, authority levels and according to company procedures |
| | 7.4 Recording systems and reports are prepared in accordance with workplace procedures and relevant regulatory requirements |

RANGE OF VARIABLES

VARIABLE	RANGE

1 Equipment, related accessories, tools, and utilities	1.1 Common equipment and related accessories may include any one but not limited to:
	   1.1.1 Holding bins
	   1.1.2 Cutting implements like knives, slicers, peelers
	   1.1.3 Jack lifts, trolleys and wheelers
	   1.1.4 Forklift
	   1.1.5 Hand truck
	   1.1.6 Chiller/refrigerator/ freezer
	   1.1.7 Weighing scales of varying capacities and sensitivities
	
	1.2 Production system equipment and materials may include any one but not limited to:
	   1.2.1 Mixers/blenders
	   1.2.2 Pumps
	   1.2.3 Soaking vats
	   1.2.4 Double jacketed kettle
	   1.2.5 Oven
	   1.2.6 Dryer
	   1.2.7 Fryer
	   1.2.8 Fuel for smoking like wood, wood shavings, half-dried leaves, coconut husks & shells, rice hulls, corn cobs, saw dust
	   1.2.9 Salinometer
	
	1.3 Packaging system equipment and materials may include any one but not limited to:
	   1.3.1 Wrapping equipment
	   1.3.2 Sealing machine
	   1.3.3 Labeling machine
	   1.3.4 Auto weighers
	   1.3.5 Packing machine
	   1.3.6 Carton scales
	   1.3.7 Strapping machine
	
	1.4 Office equipment and supplies may include any one but not limited to the following:
	   1.4.1 Information technology/Computer equipment with printer
	   1.4.2 Calculator
	   1.4.3 Bond papers
	   1.4.4 Computer papers

		1.4.5 Reporting and recording forms /logbooks
		1.5 Tools may include any one but not limited to:
		1.5.1 Screw drivers
		1.5.2 Wrenches
		1.5.3 Allen keys
		1.5.4 Drill
		1.5.5 Pliers
		1.5.6 Cutters
		1.6 Utilities may include but not limited to:
		1.6.1 Water
		1.6.2 Power
		1.6.3 Fuel
		1.6.4 Labor
2	Materials, ingredients and/or product	Materials may include any one but are not limited to:
		2.1 Raw materials
		2.1.1 Fruits and vegetables
		2.1.2 Fresh meat
		2.1.3 Dressed poultry
		2.1.4 Fish and other marine products
		2.1.5 Cereals and starches
		2.1.6 Fats and oil
		2.2 Ingredients
		2.2.1 Salt
		2.2.2 Sugars and sweeteners
		2.2.3 Condiments
		2.2.4 Spices
		2.2.5 Herbs
		2.2.6 Sauces
		2.3 Packing materials
		2.3.1 Plastic and plastic strap
		2.3.2 Cartons
		2.3.3 Boxes
		2.3.4 Sacks
		2.3.5 Foil
		2.3.6 Crate
		2.3.7 Paper
		2.3.8 Styropor

3	Pre-start checks	This may involve: 3.1 Inspecting equipment condition to identify any signs of wear 3.2 Selecting appropriate settings and/or related parameters 3.3 Canceling isolation or lockouts as required 3.4 Confirming that equipment is clean, correctly configured for processing/packaging requirements 3.5 Sensors and controls are correctly positioned 3.6 Any scheduled maintenance has been carried out and all safety guards are in place and operational
4	Data	Data on stock may include any one but not limited to: 4.1 Special handling instructions 4.2 Costs 4.3 Raw material inventory 4.4 Finished goods inventory 4.5 Supplier details 4.6 Materials in transit 4.7 Re-order point 4.8 Lead times 4.9 Expiration dates
5	Inventory/ Records System	The nature of inventory system used may include but not limited to: 5.1 Automated 5.2 Manual 5.3 Paper-based 5.4 Computerized 5.5 Microfiche

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate:
	1.1 Accessed production/packaging schedule and related information to identify line set up/changeover, system output and operating requirements
	1.2 Coordinated with relevant work areas to confirm and/or secure necessary materials, utilities, equipment and labor to meet production/packaging requirements
	1.3 Confirmed supply of necessary equipment and related attachments, materials and utilities for set up and operation
	1.4 Selected and used personal protective clothing and/or equipment
	1.5 Set and/or adjusted equipment to meet process/ packaging output requirements
	1.6 Loaded and/or positioned materials, ingredients, product, packaging components and consumables as required
	1.7 Operated and monitored the production/ packaging system
	1.8 Monitored materials flow and work-in-progress through the system
	1.9 Confirmed that the system operates within specified parameters and inspection/ control points are monitored
	1.10 Determined responses to out-of-specification results or non-conformance within level of responsibility
	1.11 Monitored operating efficiencies of the system and investigated, resolved and/or reported problems
	1.12 Planned scheduled events to minimize disruption to production/packaging
	1.13 Used re-order procedures to organize and control stock levels
	1.14 Organized cyclical stock counts and reported variances
	1.15 Conducted/coordinated product or batch/ packaging changeovers
	1.16 Conducted/coordinated shift handovers
	1.17 Reviewed and maintained procedures to support system improvements
	1.18 Maintained work area to meet housekeeping standards
2. Underpinning Knowledge and Attitudes	2.1 Purpose and basic operating principles of equipment and related accessories of the production/ packaging system
	2.2 Operating capacities of equipment used in the system
	2.3 Understanding of related systems and responsibilities for interaction like utilities supply, maintenance, etc.
	2.4 Technical knowledge of process/product/packaging

	characteristics and common types of variation in materials and/or ingredients used
	2.5 Typical equipment faults and related causes
	2.6 Pre-start checks required
	2.7 Relevant procedures, specifications and operating parameters for the system and the individual processes
	2.8 Isolation, lock out and tag out procedures and responsibilities
	2.9 Hazards, risks, controls and methods for monitoring processes within the system
	2.10 Process improvement procedures and related consultative arrangements
	2.11 Communication responsibilities to inform related work areas/support functions and other shifts of operational status and production/packaging issues
	2.12 Use of information technology devices and computer applications in the workplace
	2.12.1 Relevant OHS procedures, guidelines, risks, and hazards concerning the use of computer equipment for work tasks and ways of controlling the risks/hazards
	2.12.2 Workplace procedures for the use of computer equipment and application software appropriate for work role
	2.13 Use of inventory systems to organize stock control
	2.13.1 Principles of operation and functions of inventory systems
	2.13.2 Workplace procedures and policies for the use of inventory systems to organize stock control
	2.13.3 Application of different types of inventory systems and stock management approaches
	2.13.4 Codes and regulations relevant to the organization of stock control
	2.14 Use of factory/process automation systems
	2.15 Housekeeping standards and procedures required in the workplace
	2.16 Workplace/site layout
	2.17 Attitudes in the workplace should include:
	2.17.1 Punctual/Time conscious
	2.17.2 Cost conscious
	2.17.3 Environmental, pollution and safety conscious
	2.17.4 Flexible/adaptable
	2.17.5 Honest

	2.17.6 Dependable 2.17.7 Innovative 2.17.8 Alert 2.17.9 Systematic and organized 2.17.10 Committed 2.17.11 Good listener and fast learner 2.17.12 Creative 2.17.13 Resourceful 2.17.14 Self-starter	
3 Underpinning Skills	3.1 Oral and written communication skills e.g. read and comprehend simple English statements 3.2 Ability to modify activities depending on differing workplace contexts, risk situations and environments 3.3 Loading and/or positioning materials/ingredients/product and/or packaging consumables as required 3.4 Using the control panel/system to set and adjust equipment components 3.5 Routine maintenance 3.6 Troubleshooting and problem solving 3.7 Calibrating skills 3.8 Basic computer skills 3.9 Basic mathematical skills (conversion, percentage and formulation) 3.10 Production/packaging recording and reporting 3.11 Sanitary food handling practices 3.12 Computation of yields and recoveries	
4 Methods of Assessment	Competency in this unit must be assessed through: 4.1 Direct observation/demonstration with oral questioning 4.2 Written test 4.3 Portfolio	
5 Resource Implications	The following resources must be provided: 5.1 Specific work area/station 5.2 Equipment, tools, and materials to be set up/operated 5.3 Fruits, vegetables, fish/other marine products, meat, poultry, eggs, and processed food to be processed/packaged 5.4 Materials, consumables and ingredients relevant to the proposed activity	
6 Context of Assessment	6.1 Assessment should occur on the job or in a simulated workplace.	

UNIT OF COMPETENCY: PARTICIPATE IN AN AUDIT PROCESS

UNIT CODE : AGR741327

UNIT DESCRIPTOR: This unit deals with the skills, knowledge and attitudes required to participate in an internal audit process. It is designed to support participation in auditing a range of programs designed to identify hazards, assess risk and implement control measures. These may include but are not limited to food safety, health and safety, quality and environmental management.

ELEMENT	PERFORMANCE CRITERIA *Bold, italicized terms* are elaborated in the Range of Variables
1. Participate in planning an audit	1.1 Roles and responsibilities of participants in the audit are identified
	1.2 The purpose and scope of the audit is identified
	1.3 Information and resources required to conduct the audit are identified and located according to workplace requirements
2. Participate in conducting an audit	2.1 Adequate, representative ***information is collected*** which meets audit requirements
	2.2 Information is analyzed to assess adequacy of performance against program
	2.3 Alignment of actual practices with internal and external rules, policies, regulations/laws, and customer requirements plus needs of interested parties is checked
	2.4 Records are reviewed to confirm compliance with the program and that the system is effective and efficient
	2.5 Compliance with the program is observed in the workplace
	2.6 Areas requiring corrective action are identified and that corrective actions prevent recurrence of problems in accordance with the audit program
3. Report and follow up audit outcomes	3.1 Situations presenting an imminent and serious risk to the program objectives are identified and reported immediately in accordance with reporting requirements
	3.2 Audit reports are prepared to address audit scope requirements
	3.3 The results of the audit are communicated according to audit purpose and requirements
	3.4 A corrective action plan is developed

RANGE OF VARIABLES

	VARIABLE	RANGE
1	Information collection method	Information collection methods may include but not limited to: 1.1 Interviews 1.2 Observation 1.3 Review of workplace records 1.4 Accessing relevant technical information
2	Corrective action plan	Corrective action plan identifies the following but is not limited to: 2.1 Non-conformance 2.2 Corrective actions 2.3 Date by which action must be taken 2.4 Any other follow up requirements

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate:
	1.1 Identified personal roles and responsibilities in the audit process
	1.2 Identified audit purpose, scope, steps and timelines
	1.3 Identified, reviewed and prepared information, workplace documents and tools required to conduct the audit
	1.4 Identified any changes that have occurred in the workplace since initiating the program
	1.5 Applied appropriate questioning, observation and related communication skills to support information collection
	1.6 Reviewed records, conducted interviews, observed workplace practice and collected other relevant information
	1.7 Took immediate action to report non-conformities that present an imminent and serious risk to the program objectives within level of responsibility
	1.8 Identified, investigated and recorded evidence of non-conformance and judged significance
	1.9 Assessed the adequacy of the program by analyzing the information collected against the program objectives
	1.10 Prepared the report, formed conclusions and communicated outcomes within level of responsibility
	1.11 Participated in investigation of causes of failure and identification of corrective action options
	1.12 Implemented identified corrective actions
2. Underpinning Knowledge and Attitudes	2.1 The purpose and intent of the program being audited
	2.2 Personal roles and responsibilities in the audit process and related responsibilities of other members of the audit team
	2.3 The purpose and stages involved in the audit process
	2.4 Workplace information and related information management systems
	2.5 Techniques for collecting information.
	2.6 Data analysis methods relevant to the audit process
	2.7 Communication skills and techniques appropriate to the workplace
	2.8 Technical knowledge relevant to the program being audited in order to verify compliance and assess adequacy of existing control measures.
	2.9 Purpose and responsibilities for maintaining records
	2.10 Internal and international standards
	2.11 Regulations with regard to environment and regulatory and statutory requirements
	2.12 Attitudes in the workplace should include:

	2.12.1 Self-esteem 2.12.2 Time conscious 2.12.3 Cost conscious 2.12.4 Honest 2.12.5 Detailed 2.12.6 Innovative 2.12.7 Alert 2.12.8 Systematic and organized 2.12.9 Committed 2.12.10 Creative 2.12.11 Resourceful	
3. Underpinning Skills	3.1 Oral and written communication skills 3.2 Calibrating skills 3.3 Basic computer skills 3.4 Basic mathematical skills 3.5 Recording and reporting skills 3.6 Preparing flow diagrams/flow charts 3.7 Computation of yields and recoveries	
4. Methods of Assessment	Competency in this unit must be through: 4.1 Direct observation/Demonstration with oral questioning 4.2 Written test 4.3 Portfolio	
5. Resource Implications	The following resources must be provided: 5.1 Specific work area/station 5.2 Equipment and tools 5.3 Range of programs, procedures, systems, processes 5.4 Materials relevant to the proposed activity	
6. Context of Assessment	6.1 Assessment should occur on the job or in a simulated workplace.	

UNIT OF COMPETENCY: PARTICIPATE IN A HACCP TEAM

UNIT CODE   : AGR741328

UNIT DESCRIPTOR: This unit deals with the skills, knowledge and attitudes required to participate in the development, review and implementation of a HACCP-based food safety program under direction. It is appropriate where the operator requires a detailed understanding of the steps and techniques used to develop and review a HACCP-based food safety program.

ELEMENT	PERFORMANCE CRITERIA ***Bold, italicized terms*** are elaborated in the Range of Variables
1. Prepare to develop and/or review a food safety program	1.1 Roles and responsibilities for participating in developing or reviewing a ***food safety program*** are identified 1.2 The scope of the food safety program is identified to cover the area of responsibility according to workplace requirements
2. Identify and/or review food safety hazards	2.1 Processes to be covered by the food safety program are identified and steps within each process are described 2.2 Expert resource is used for planning and identifying physical, chemical, and microbial hazards 2.3 ***Food safety hazards*** that are reasonably expected to occur are identified for each process based on the food safety program 2.4 Handling methods, processing techniques and existing ***support programs*** used in the workplace are identified according to the food safety program
3. Establish, implement and review methods to monitor and control food safety hazards	3.1 Acceptable methods of control are established, implemented and reviewed for each food safety hazard that is reasonably expected to occur 3.2 ***Control methods*** are validated according to the food safety program 3.3 Procedures for taking preventative action are established 3.4 Appropriate methods for monitoring that processes remain within control are established 3.5 Required corrective action to respond to situations where hazards are not effectively controlled is established

4. Establish and review food safety documentation, communication and recording systems	4.1	Food safety-related roles and responsibilities are communicated
	4.2	Records required to document, implement and maintain the food safety program are established according to workplace reporting requirements
	4.3	Record keeping requirements and responsibilities are communicated to food business personnel

RANGE OF VARIABLES

VARIABLE	RANGE
1 Food safety program	The food safety program may include but not limited to: 1.1 Process flow diagrams 1.2 Hazard analysis charts and tables 1.3 Support program requirements 1.4 Data analysis reports 1.5 Corrective action reports 1.6 Verification reports 1.7 HACCP plan
2 Food safety hazards	Food safety hazards may include but not limited to: 2.1 Micro-biological 2.2 Chemical 2.3 Physical hazards
3 Support programs	Typical support programs include but not limited to : 3.1 Supplier accreditation 3.2 Good Agricultural Practices 3.3 Good Manufacturing Practices 3.4 Product recall 3.5 Cleaning schedules 3.6 Stock rotation 3.7 Product traceability 3.8 Pest management programs 3.9 Surveillance testing for pesticide/antibiotic/trace metal residues 3.10 Mycotoxin testing 3.11 Personal hygiene practices 3.12 Calibration procedures 3.13 Preventive maintenance 3.14 Related operating procedures
4 Control methods	Methods used to control hazards include both. 4.1 Support programs and 4.2 Specific hazard control limits or requirements

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate:
	1.1 Identified personal roles and responsibilities for participating in the development or review of a food safety program
	1.2 Identified processes and steps to be covered
	1.3 Identified hazards that are reasonably expected to occur and establish appropriate methods of control
	1.4 Established or reviewed procedures for implementing preventative action
	1.5 Described the appropriate monitoring requirements for each food safety hazard
	1.6 Described corrective action requirements in the event that acceptable limits or requirements of support programs are not met
	1.7 Developed or reviewed documentation relating to the design and maintenance of the food safety program
	1.8 Developed or reviewed documentation to communicate food safety responsibilities
	1.9 Communicated food safety responsibilities within level of responsibility using techniques and presentation styles appropriate to the audience
2. Underpinning Knowledge and Attitudes	2.1 Roles and responsibilities for development and maintenance of the food safety program
	2.2 Techniques for applying HACCP-based principles
	2.3 Techniques used to map operations and analyze food safety requirements
	2.4 Sources of technical expertise on food safety requirements
	2.5 Main types of food safety hazards/contamination likely to occur given the type of product and processing methods used
	2.6 Typical support programs and acceptable control methods for the hazards identified and required corrective action when control requirements are not met
	2.7 Raw materials, ingredient and finished product composition and characteristics and related handling and storage requirements
	2.8 Food processing methods used in the workplace or work area and their effect on food safety
	2.9 The purpose and intent of food safety legislation
	2.10 Purpose and responsibilities for maintaining records as required by legislation and workplace procedures
	2.11 Documentation and recording requirements to support communication and monitoring of the food safety program.

TR- Food Processing NC IV

	2.12 Conditions required for bacterial food poisoning to occur.
	2.13 Validation and verification processes and techniques and responsibilities
	2.14 Attitudes in the workplace should include
	2.14.1 Self-esteem
	2.14.2 Time conscious
	2.14.3 Cost conscious
	2.14.4 Environmental and pollution conscious
	2.14.5 Flexible/adaptable
	2.14.6 Honest
	2.14.7 Dependable
	2.14.8 Innovative
	2.14.9 Alert
	2.14.10 Systematic and organized
	2.14.11 Committed
	2.14.12 Creative
	2.14.13 Resourceful
	2.14.14 Self–starter
3. Underpinning Skills	3.1 Inspection and monitoring skills
	3.2 Oral and written communication skills
	3.3 Calibrating skills
	3.4 Basic computer skills
	3.5 Basic mathematical skills
	3.6 Recording and reporting skills
4. Methods of Assessment	Competency in this unit must be assessed through:
	4.1 Direct observation/Demonstration with oral questioning
	4.2 Written test
	4.3 Portfolio
5. Resource Implications	The following resources must be provided:
	5.1 Specific work area/station
	5.2 Equipment and tools for inspection and monitoring
	5.3 Range of programs, processes, systems and procedures on food safety
	5.4 Materials relevant to the proposed activity
6. Context of Assessment	6.1 Assessment should occur on the job or in a simulated workplace.

UNIT OF COMPETENCY: MONITOR WORKPLACE PERFORMANCE AND PARTICIPATE IN IMPROVEMENT PROCESSES

UNIT CODE : AGR741329

UNIT DESCRIPTOR: This unit deals with the skills, knowledge and attitudes required to monitor and report on performance of a work area and participate in performance improvement processes that involve systematic analysis of performance to identify and propose opportunities for improvement.

ELEMENT	PERFORMANCE CRITERIA ***Bold, italicized terms*** are elaborated in the Range of Variables
1. Identify recording and reporting requirements	1.1 The purpose of recording information is identified 1.2 Recording and reporting responsibilities are identified 1.3 Recording and reporting systems and formats are identified according to workplace reporting requirements 1.4 Workplace standards and key performance indicators are identified and used for performance measurements based on company policies and procedures
2. Maintain and secure workplace information	2.1 Records are confirmed to be complete, timely and accurate 2.2 Performance ***information is recorded*** in required format to meet workplace reporting requirements 2.3 Errors or discrepancies in recording are identified and corrected or notified to appropriate personnel 2.4 Variances are identified, investigated and reported according to workplace procedure 2.5 Requests for information are assessed, prioritized and addressed to meet required timelines 2.6 Access levels and authorities are identified according to records maintenance and security policies 2.7 Security breaches are identified and reported to appropriate personnel
3. Analyze performance and identify	3.1 Barriers to good practice or optimal performance are identified

opportunities for improvement	3.2	Scope of issue or problem to be addressed is clearly defined
	3.3	Benchmarking is done within the company (by department), within the food industry, and across different industries to identify potential improvement
	3.4	**Objectives** to be addressed by improvement proposals are defined according to company plans and targets
4. Identify other data requirements	4.1	Other data required to investigate improvement opportunity is identified
	4.2	Appropriate **data collection methods** are selected according to prescribed survey procedures and available budget
	4.3	Additional resources available to support investigation are identified
5. Analyze the issue or problem	5.1	**Techniques** required to investigate nature of issue or problem are selected and applied according to appropriate analytical and statistical tools
	5.2	A detailed description of the issue or problem is developed
	5.3	Possible causes are identified and tested
	5.4	Options for improvement are identified and assessed
6. Recommend options for improvement	6.1	Preferred options are identified and described
	6.2	Recommendations are presented in formats appropriate to the issue and the audience
	6.3	Recommendations are consistent with data collected and analyzed and in accordance with objectives identified
7. Participate in implementing improvement proposals	7.1	Improvement trials are supported
	7.2	Improvement proposals are evaluated and refined based on company plans and targets
	7.3	Operating procedures are updated and communicated to reflect implementation of improved practices
	7.4	Improvement in performance is monitored according to workplace reporting procedures

RANGE OF VARIABLES

	VARIABLE	RANGE
1	Information recorded	Information recorded and reported may include but is not limited to: 1.1 Timesheets 1.2 Log sheets 1.3 Recipes/specifications, 1.4 Operating procedures 1.5 Production statistics and downtime 1.6 Labor and materials usage levels
2	Objectives	Objectives of the improvement proposals may include but not limited to: 2.1 Quality 2.2 Cost 2.3 Efficiency 2.4 Job satisfaction 2.5 OHS 2.6 Environmental management 2.7 Customer feedback

3	Data collection methods	Data collection methods may include but not limited to:
		3.1 Primary data
		    3.1.1 Collecting samples
		    3.1.2 Taking measurements
		    3.1.3 Laboratory analysis
		    3.1.4 Actual observation
		    3.1.5 Personal interview
		    3.1.6 Telephone interview
		    3.1.7 Mail questionnaire
		
		3.2 Secondary data
		    3.2.1 Performance/accomplishment reports
		    3.2.2 Audit reports
		    3.2.3 Out-of-specification/non-conformance reports
		    3.2.4 Emergency/accident reports

4	Techniques	Problem solving tools/techniques involved in this Unit of Competency include but is not limited to: 4.1 Fishbone diagrams/cause and effect diagrams 4.2 Workflow analysis 4.3 Pareto diagrams 4.4 SWOT analysis

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Identified significant performance variance, investigated and reported cause/s 1.2 Identified information security requirements and procedures for responding to/reporting a security breach 1.3 Identified nature and scope of improvement opportunity 1.4 Consulted others to confirm improvement opportunity definition 1.5 Determined data collection requirements and appropriate collection methods 1.6 Identified resources requirements to support investigation 1.7 Collected data 1.8 Determined and applied appropriate data analysis techniques 1.9 Drew conclusions based on the data collected and analyzed 1.10 Communicated findings in forms appropriate to the nature of the issue and the audience 1.11 Received and took account of feedback 1.12 Participated in related trials and/or changes to work practices arising from improvement proposals 1.13 Monitored and documented results of trials/implementation and participated in modifying change to support ongoing improvement
2. Underpinning Knowledge and Attitudes	2.1 The purpose and responsibilities for the information records and reports to be produced/maintained 2.2 Information system access levels and codes 2.3 Objectives to be addressed by improvement proposals 2.4 Workplace approach to structuring improvement processes 2.5 Resources available to the workplace to support improvement processes 2.6 Data collection and analysis techniques appropriate to the nature of the improvement opportunity and the workplace 2.7 Communication techniques to support data collection, consultation and team work required to participate in improvement processes 2.8 Documentation management systems to support changes in work practices to reflect improvement processes 2.9 Attitudes in the workplace should include 2.9.1 Analytical/Inquisitive

TR- Food Processing NC IV

	2.9.2 Time conscious 2.9.3 Cost conscious 2.9.4 Environmental and pollution conscious 2.9.5 Flexible/adaptable 2.9.6 Honest 2.9.7 Innovative 2.9.8 Alert 2.9.9 Systematic and organized 2.9.10 Committed 2.9.11 Creative 2.9.12 Resourceful	
3. Underpinning Skills	3.1 Oral and written communication skills 3.2 Calibrating skills 3.3 Basic computer skills 3.4 Basic mathematical skills 3.5 Recording and reporting skills 3.6 Preparing flow diagrams/flow charts 3.7 Problem solving skills 3.8 Use of analytical techniques	
4. Methods of Assessment	Competency in this unit must be assessed through: 4.1 Direct observation/Demonstration with oral questioning 4.2 Written test 4.3 Portfolio	
5. Resource Implications	The following resources must be provided: 5.1 Specific work area/station 5.2 Equipment and tools for reporting, recording, and data collection 5.3 Recording and reporting systems 5.4 Range of case studies, work situations, problems on improvement 5.5 Materials relevant to the proposed activity	
6. Context of Assessment	6.1 Assessment should occur on the job or in a simulated workplace.	

SECTION 3   TRAINING STANDARDS

These guidelines are set to provide the Technical and Vocational Education and Training (TVET) providers with information and other important requirements to consider when designing training programs for Food Processing NC IV.

3.1.   CURRICULUM DESIGN

Course Title: <u>FOOD PROCESSING</u>   NC Level: <u>NC IV</u>

Nominal Training Duration: 56 hours (Basic)
                                                      160 hours (Common)
                                                      360 hours (Core)
                                                      576 hours (Total)

Course Description:

This course is designed to enhance the knowledge, desirable skills and attitudes under Food Processing NC IV in accordance with industry standards. It covers the basic, common and core competencies.

BASIC COMPETENCIES
(56 hours)

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Utilize specialized communication skills	1.1 Meet common and specific communication needs of clients and colleagues 1.2 Contribute to the development of communication strategies 1.3 Represent the organization 1.4 Facilitate group discussion 1.5 Conduct interview	• Group discussion • Interaction • Brainstorming	• Demonstration • Observation • Interviews/ questioning
2. Develop team and individual	2.1 Provide team leadership 2.2 Foster individual and organizational growth 2.3 Monitor and evaluate workplace learning 2.4 Develop team commitment and cooperation 2.5 Facilitate accomplishment of organizational goals	• Lecture • Discussion • Interaction	• Demonstration • Observation • Interviews/ questioning

3. Apply problem solving techniques in the workplace	3.1 Analyze the problem 3.2 Identify possible solutions 3.3 Recommend solution to higher management 3.4 Implement solution 3.5 Evaluate/Monitor results and outcome	• Lecture • Discussion • Interaction	• Demonstration • Observation • Interviews/ questioning • Practical/ performance test
4. Collect, analyze and organize information	4.1 Study information requirements 4.2 Process data 4.3 Analyze, interpret and organize information gathered 4.4 Present findings/ recommendations	• Discussion • Direct observation • Simulation/ role playing	• Observation • Interview • Practical/ performance test
5. Plan and organize work	5.1 Set objectives 5.2 Plan and schedule work activities 5.3 Implement work plans 5.4 Monitor work activities 5.5 Review and evaluate work plans and activities	• Discussion • Direct observation • Simulation/ role playing	• Observation • Interview • Practical/ performance test

COMMON COMPETENCIES
(160 hours)

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Apply Food Safety and Sanitation (24 hours)	1.1 Wear personal protective equipment 1.2 Observe personal hygiene and good grooming 1.3 Implement food sanitation practices 1.4 Render safety measures and first aid procedures 1.5 Implement housekeeping activities	• Demonstration • Dual training • Individual Self-paced learning • Lecture	• Written examination • Demonstration of practical skills • Direct observation • Interview

2. Use Standard Measuring Devices/ Instruments (16 hours)	2.1 Identify standard measuring devices and instruments 2.2 Review the procedures in using standard measuring devices and instruments 2.3 Follow procedures of using measuring devices and instruments	• Demonstration • Dual training • Individual Self-paced Learning • Lecture	• Written examination • Demonstration of practical skills • Direct observation • Interview
3. Use Food Processing Tools, Equipment and Utensils (16 hours)	3.1 Perform Pre-Operation Activities 3.2 Operate, monitor and maintain Food processing Equipment 3.3 Perform post operation activities	• Demonstration • Dual training • Individual Self-paced Learning • Lecture	• Written examination • Demonstration of practical skills • Direct observation • Interview
4. Perform Mathematical Computations (8 hours)	4.1 Gather, summarize and tabulate the recorded data 4.2 Review the various formulations 4.3 Calculate production input and output 4.4 Compute production cost	• Lecture • Practical exercise	• Written examination • Practical exercise • Direct Observation
5. Implement Good Manufacturing Practice (32 hours)	5.1 Perform pre-work activities in relation to GMP 5.2 Identify requirements of GMP related to own work 5.3 Observe personal hygiene and conduct to meet GMP requirements 5.4 Follow GMP requirements when carrying out work activities 5.5 Perform post-work activities in relation to GMP 5.6 Complete workplace documentation to support GMP	• Audio Visual • Lecture/ Discussion • Practical Lab • Demonstration • Individual Self-paced Learning	• Written/Oral examination • Demonstration of practical skills • Direct observation • Interview

6. Implement Environmental Policies and Procedures (32 hours)	6.1 Access and apply workplace information on environmental policies and procedures relating to own work 6.2 Follow work procedures 6.3 Identify, control and report unacceptable performance 6.4 Maintain housekeeping standards in work area	• Audio Visual • Lecture/ Discussion • Practical Lab • Demonstration • Individual Self paced Learning	• Written/Oral examination • Demonstration of practical skills • Direct observation • Interview
7. Monitor the Implementation of Good Manufacturing Practice (16 hours)	7.1 Ensure others in the work area are able to meet GMP requirements 7.2 Monitor personal hygiene and conduct of team members in the work area 7.3 Monitor implementation of GMP requirements in the work area 7.4 Contribute to validation processes 7.5 Take corrective action in response to GMP non-compliance 7.6 Maintain and improve GMP in the work area	• Audio Visual • Lecture/ Discussion • Practical Lab • Demonstration • Individual Self-paced Learning	• Written/Oral examination • Demonstration of practical skills • Direct observation • Interview
8. Monitor the Implementation of environmental policies (16 hours)	8.1 Ensure others in the work area are able to implement environmental work practices 8.2 Monitor observance of work procedures 8.3 Implement emergency procedures to respond to hazardous events 8.4 Maintain and improve environmental management in the work area	• Audio Visual • Lecture/ Discussion • Practical Lab • Demonstration • Individual Self-paced Learning	• Written/Oral examination • Demonstration of practical skills • Direct observation • Interview

CORE COMPETENCIES
(360 hours)

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Apply raw materials/ ingredients and process knowledge (32 hours)	1.1 Identify and respond to non-conforming ingredients/raw materials 1.2 Identify and respond to non-conforming product and processes	• Audio Visual • Lecture/ Discussion • Practical Lab • Demonstration • Individual Self-paced Learning	• Direct Observation • Demonstration with oral questioning • Written test
2. Maintain food safety when loading, unloading and transporting food (24 hours)	2.1 Prepare to transport food 2.2 Load, unload, and transport food safely	• Audio Visual • Lecture/ Discussion • Practical Lab • Demonstration • Individual Self-paced Learning	• Direct Observation • Demonstration with oral questioning • Written test
3. Participate in sensory analysis (24 hours)	3.1 Conduct sensory analysis 3.2 Report results of sensory analysis	• Audio Visual • Lecture/ Discussion • Practical Lab • Demonstration • Individual Self-paced Learning	• Direct Observation • Demonstration with oral questioning • Written test
4. Set up and operate processes in a production/ packaging system (160 hours)	4.1 Set up production/ packaging system for operation 4.2 Operate and monitor the system 4.3 Use re-order procedures to maintain stock levels 4.4 Organize cyclical stock counts and report variances 4.5 Handover production/ packaging system operation 4.6 Shut down the production/ packaging system 4.7 Contribute to the continuous improvement	• Audio Visual • Lecture/ Discussion • Practical Lab • Demonstration • Individual Self-paced Learning	• Direct Observation • Demonstration with oral questioning • Written test

	of the production/ packaging system		
5. Participate in an audit process (40 hours)	5.1 Participate in planning an audit 5.2 Participate in conducting an audit 5.3 Report and follow up audit outcomes	• Audio Visual • Lecture/ Discussion • Practical Lab • Demonstration • Individual Self-paced Learning	• Direct Observation • Demonstration with oral questioning • Written test
6. Participate in a HACCP team (40 hours)	6.1 Prepare to develop and/or review a food safety program 6.2 Identify and/or review food safety hazards 6.3 Establish, implement and review methods to monitor and control food safety hazards 6.4 Establish and review food safety documentation, communication and recording systems	• Audio Visual • Lecture/ Discussion • Practical Lab • Demonstration • Individual Self-paced Learning	• Direct Observation • Demonstration with oral questioning • Written test
7. Monitor workplace performance and participate in improvement processes (40 hours)	7.1 Identify recording and reporting requirements 7.2 Maintain and secure workplace information 7.3 Analyze performance and identify opportunities for improvement 7.4 Identify other data requirements 7.5 Analyze the issue or problem 7.6 Recommend options for improvement 7.7 Participate in implementing improvement proposals	• Audio Visual • Lecture/ Discussion • Practical Lab • Demonstration • Individual Self-paced Learning	• Direct Observation • Demonstration with oral questioning • Written test

3.2 TRAINING DELIVERY

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

- The training is based on curriculum developed from the competency standards;

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

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

- The dualized mode of training delivery is preferred and recommended. Thus programs would contain both in-school and in-industry training or fieldwork components. Details can be referred to the Dual Training System (DTS) Implementing Rules and Regulations.

- Modular/self-paced learning is a competency-based training modality wherein the trainee is allowed to progress at his own pace. The trainer just facilitates the training delivery.

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

- Supervised industry training or on-the-job training is an approach in training designed to enhance the knowledge and skills of the trainee through actual experience in the workplace to acquire specific competencies prescribed in the training regulations.

- Distance learning is a formal education process in which majority of the instruction occurs when the students and instructor are not in the same place. Distance learning may employ correspondence study, audio, video or computer technologies.

- Project-based instruction is an authentic instructional model or strategy in which students plan, implement and evaluate projects that have real world applications.

3.3 TRAINEE ENTRY REQUIREMENTS

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

- can communicate both oral and written
- physically and mentally fit
- with good moral character
- can perform basic mathematical computation

3.4 LIST OF TOOLS, EQUIPMENT AND MATERIALS

FOOD PROCESSING NC IV

Recommended list of tools, equipment and materials for the training of 25 trainees for Food Processing NC IV.

TOOLS		EQUIPMENT		MATERIALS	
QTY	Description	QTY	Description	QTY	Description
5	Weighing scales and balances of various capacities and sensitivities	1 set	Food processing system with retort, pump, boiler, cooker, steamer, dehydrator	**A. Food supplies**
5	Dietetic scales (1 kg. capacity)	1	Chiller	5 doz	Fresh eggs
15	Pairing knives	1	Refrigerator	10 kg	Fresh meat
10	Peelers	1	Freezer	10 pcs	Dressed poultry
5	Measuring spoons, sets	5	Stoves	20 kg	Fresh fish (medium size)
5	Measuring cups (solid)	1 set	Food packaging system with filling & sealing, can seamer, shrink wrapper, strapper, case packer, labeler	1 set	Curing ingredients (good for 10 kg)
5	Measuring cups (liquid)	1	Jack lift	20 kg	Fresh fish (small)
1 set	Wrench, screw driver, belts, nuts & bolts	1	Trolley	10 kg	Fresh fruits
2	Clocks/timer	1	Wheeler	10 kg	Fresh vegetables
15	Mixing bowls,	1	Poly/temperature	2 gal	All spice pickling

	stainless steel		sealer		solution	
10	Hard plastic chopping boards	1	Cap sealer	3 kg	Salt (Pangasinan)	
5	Thermometers of varying temperature range	1	Pressure canner	1 sack	Refined sugar	
5	Glasswares like cylinder, beaker, flask	1	Pressure cooker	3 gal	Vinegar	
5	Jar liter	1	Cap seal	1 gal	Mother vinegar	
1	Food processor, set	1	Oven	1 kg	Citric acid	
5	Wire baskets	2	Steam-jacketed kettle	1 kg	Sodium benzoate	
15	Casseroles stainless steel	5	Smoking trays	1 kg	Firming agent	
10	Saucepan, stainless steel	1	Meat grinder	1 can	Active dry yeast	
15	Spoons, wooden	1	Stuffer/linker			
10	Spoon, basting	1	Silent cutter	**B. Non food**		
4	Paddles, wooden	2	Brix refractometers (0-90º brix)	5 sets	Packaging materials – can, paper, plastic, bottle, glass, carton, laminates	
10	Food tongs	1	Salinometer	1 pack	Tags/labels	
2	Steamer	2	Electronic scales (0.1 gm capacity)	1 set	Chemicals – soda acid, amines, condensate chemicals	
5	Soaking container	1	Consistometer/ viscosimeter	3 boxes	8 oz., 12 oz., round bottles w/ PVC caps	
5	Fermented containers	1	Vacuum pack machine	3 boxes	Catsup bottles w/ plastic caps	
20	Utility trays	1	Laboratory scale cabinet drier or forced draft oven	2 packs	Cap seals	
15	Colanders, stainless steel	1	Headspace gauge	2 gals	Disinfectant/ sanitizers	
		3 sets	Test equipment – pH meter, centrifuge, moisture meter, color chart /colorimeter,	1 set	Various test reagents e.g. hydrochloric acid, sulfuric acid,	

		texture meter		sodium hydroxide, hydrogen peroxide
	TRAINING MATERIALS	3 sets	Computer	5	Bar soap/ detergent
	Books/reference	3 sets	Fire Fighting Equipment	1 btl.	Glue
	Manuals	3 sets	First aid kit		
	Videos	3 sets	PPE – apron, mouth mask, gloves, rubber boots, head gear, hard hat, goggles, heavy sweater		

3.5 TRAINING FACILITIES

FOOD PROCESSING NC IV

The food processing workshop must be of concrete structure. Based on a class size of 25 students/trainees the space requirements for the teaching/learning and circulation areas are as follows:

SPACE REQUIREMENT	SIZE IN METERS	AREA IN SQ. METERS	TOTAL AREA IN SQ. METERS
A. Building (permanent)			
Laboratory area	6 x10	60	60
Tool room & S/M storage area	4 x 5	20	20
Learning resource area	5 x 6	30	30
Wash area/comfort room (male & female)	2.5 x 4	10	10
Total			120
Facilities/Equipment/Circulation (30% of teaching accommodation)			40
B. Experimental Land Area			n/a
Total workshop area			160

Note: Experimental area will change according to availability of land.

3.6 TRAINER'S QUALIFICATIONS FOR FOOD PROCESSING NC IV

TRAINER QUALIFICATION (TQ IV)

- Must be a holder of Food Processing NC IV or its equivalent
- Must have undergone training on Training Methodology IV (TM IV)
- Must be computer literate
- Must be physically and mentally fit
- Must have at least 2 years job/industry experience
- Must be a civil service eligible (for government position or appropriate professional license issued by the Professional Regulatory Commission)

Reference: TESDA Board Resolution No. 2004 <u>03</u>

3.7 INSTITUTIONAL ASSESSMENT

Institutional Assessment is to be undertaken by the learner who enrolled in a structured learning program to determine the achievement of competencies. It is administered by the trainer/assessor at end of each learning module.

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

SECTION 4 NATIONAL ASSESSMENT AND CERTIFICATION ARRANGEMENTS

4.1 To attain the National Qualification of **Food Processing NC IV,** the candidate must demonstrate competence of all the units listed in Section 1. Successful candidates shall be awarded a National Certificate signed by the TESDA Director General.

4.2 The qualification of Food Processing NC IV may be attained through accumulation of Certificates of Competency (COCs) in the   following areas:

4.2.1 Apply raw materials/ingredients and process knowledge
4.2.2 Maintain food safety when loading, unloading and transporting food
4.2.3 Participate in sensory analysis
4.2.4 Set up and operate processes in a production/ packaging system
4.2.5 Participate in an audit process
4.2.6 Participate in a HACCP team
4.2.7 Monitor workplace performance and participate in improvement processes

Successful candidates shall be awarded Certificates of Competency (COCs)

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4.3 Accumulation and submission of all COCs acquired for the relevant units of competency comprising a qualification, an individual shall be issued the corresponding National Certificate.

4.4 Assessment shall focus on the core units of competency. The basic and common units shall be integrated or assessed concurrently with the core units.

4.5 The following are qualified to apply for assessment and certification:

4.5.1 Graduates of formal, non formal and informal including enterprise-based training programs.

4.5.2. Experienced workers (wage employed or self-employed)

4.6 The guidelines on assessment and certification are discussed in detail in the Procedures manual on Assessment and Certification and Guidelines on the implementation of the Philippine TVET Qualification and Certification System (PTQCS).

COMPETENCY MAP FOR PROCESSED FOOD AND BEVERAGES SECTOR

CORE UNITS OF COMPETENCY

Implement sampling procedures	Load and unload raw materials, products and/or supplies	Control and order stock	Operate a packaging process	Participate in sensory analysis
Inspect and sort materials and product	Process Food by Salting, Curing and Smoking	Apply product knowledge to complete work operations	Work in a freezer storage area	Set up and operate processes in a production / packaging system
Dispense non bulk ingredients	Process Food by Fermentation and Pickling	Perform basic tests in raw materials, in process and finished products	Work with temperature controlled stock	Participate in an audit process
Prepare raw materials for processing	Process food by sugar concentration	Operate a boiler	Handle dangerous goods/hazardous substances	Participate in a HACCP team
Operate basic equipment	Package Finished / Processed Food Products	Operate pumping equipment	Apply raw materials / ingredients and process knowledge	Monitor workplace performance and participate in improvement processes
Clean and sanitize equipment and processing/packaging area	Receive and store stock	Operate and monitor food processes and equipment	Maintain food safety when loading, unloading and transporting food	

Continuation ..... Competency Map for Processed Food and Beverages Sector

COMMON UNITS OF COMPETENCY

Apply Food Safety and Sanitation	Use Standard Measuring Devices / Instruments	Use Food Processing Tools, Equipment and Utensils	Follow work procedures to maintain Good Manufacturing Practice	Perform Mathematical Computation
Implement Good Manufacturing Practice Procedures	Implement Environmental Policies and Procedures	Monitor the Implementation of Good Manufacturing Practice Procedures	Monitor the Implementation of Environmental Policies and Procedures	

BASIC UNITS OF COMPETENCY

Receive and Respond to Workplace Communication	Participate in Workplace Communication	Lead Workplace Communication	Use Relevant Technologies	Collect, analyze and organize information
Work with Others	Work in a Team Environment	Lead Small Team	Utilize Specialized Communication Skills	Plan and Organize Work
Demonstrate Work Values	Practice Career Professionalism	Develop and practice negotiation skills	Develop Team and Individual	
Practice Housekeeping Procedures	Practice Occupational Health and Safety Procedures	Solve Workplace Problems Related to Work Activities	Apply Problem Solving Techniques in the Workplace	

Food Processing NC IV

TR- Food Processing NC IV

111

DEFINITION OF TERMS

For the purpose of this competency standard, the following words are defined:

.1 **Competency** – is the application of knowledge, skills and attitudes to perform work activities to the standard expected in the workplace.

.2 **Unit of Competency** – describes a work activity.

.3 **Elements** – are building blocks of a unit of competency. It describes in outcome terms the functions that a person who works in a particular area of work is able to perform.

.4 **Performance Criteria** – are evaluative statements that specify what is to be assessed and the required level of performance.

.5 **Range of Variables** – describe the circumstances or context in which the work is to be performed.

.6 **Evidence Guide** – a guide for assessment that provides information on critical aspects of competency, underpinning knowledge, underpinning skills, resource implications, context of assessment and assessment methods.

.7 **Blanching** – refers to a heat treatment in which the raw food material is immersed in hot water or exposed to live steam.

.8 **Bottling/Canning** – refers to a preservation of foods in hermetically sealed containers such as tin cans and glass jars by sterilization with heat

.9 **BFAD** - means Bureau of Food and Drug

.10 **Brine** – refers to a salt solution

.11 **Cabinet Drying** - refers to a process of dehydrating food material using a cabinet drier consisting of a closed chamber which is well insulated against heat loss

.12 **Chilling** – is subjecting meat to a temperature of 2-4°C (36-40°F) at certain period of time

.13 **Curing** – refers to a process by which salt, sugar and salitre and other preservatives and adjuncts are introduced/are used to prolong the keeping quality of the products

TR- Food Processing NC IV

.14 **Dehydration** - refers to drying by artificially produced heat under carefully controlled conditions of temperature, humidity and airflow within a chamber

.15 **Dry Curing**– refers to a method of curing meat where curing mixture is rubbed on the surface of the food material being cured.

.16 **Exhausting** – refers to the removal of air and gases from the raw material and the container before sealing; It refers to the heating of canned foods to a center can temperature of 180°C to 205°F before sealing.

.17 **Fermentation** – refers to the anaerobic oxidation of carbohydrates by microbial enzymes

.18 **Food Additives**- refer to substances intentionally added to foods to achieve or retain desired characteristics

.19 **Food Processing** – refers to the application of heat in varying degree to the food enclosed in a container for a sufficient time to sterilize the product

.20 **GMP** – Good Manufacturing Practice which is a combination of manufacturing and quality control procedures aimed at ensuring that products are consistently manufactured to their specifications

.21 **GRAS**- means generally regarded as safe

.22 **HACCP** – Hazard Analysis Critical Control Point is a food safety management system which concentrates prevention strategies on known hazards and the risks of them occurring at specific points in the food chain

.23 **Hazard** – the potential to cause harm which may include bacteria, virus, toxin, parasite, chemical or physical hazard. Operational malpractices or other operations/processes can also become hazards if they lead to unacceptable contamination or growth and survival of organisms and microorganisms

.24 **Hermetic Sealing**- refers to the closure of tin cans or glass jars tightly to prevent the entrance of microorganisms

.25 **Packaging** – any container or material used in the packaging of a product which may include materials in direct contact with the product, printed packs including labeling, and other materials including outer cartons or delivery cases

_____ 113

.26 **Packing Medium** – refers to brine, syrup, broth, oil or other similar ingredients used as canning medium

.27 **Pickling**- refers to the preservation of foods by brine and vinegar with or without bacterial fermentation

.28 **pH meter** – refers to an instrument used to measure the acidity of a sample

.29 **Preservatives**- refer to food additives that retard spoilage and preserve the natural color & flavor of food products

.30 **Pulverize** – to reduce by crushing or grinding to very small particles

.31 **Raw Materials** – consist of the main food material to be processed including minor food ingredients

.32 **Retort Specification** – refers to a steam pressure canner used in sterilizing low acid canned foods

.33 **Salinometer**- refers to the instrument to measure strength of brine

.34 **Sanitation** - refers to the process of treating food contact and non-food contact surface with physical agents and chemicals to kill the residual microorganisms present after cleaning

.35 **Smoke** – refers to the gas from burning wood material containing combustible and noncombustible substances, the combustible substances are the main sources of smoke which consist of cellulose, lignin, pentosans, tannic acid, protein substances, resins and terpenes

.36 **Smoking** – refers to subjecting the product to the action of smoke from burning wood materials

.37 **Smoke House**- refers to a closed smoke chamber where smoke is produced which may range from the temporary (barrel) smoke house to the permanent frame or concrete smoke house.

.38 **Standard Measurement** – refers to something set up as a rule for measuring or a model to be followed

.39 **Sugar Concentrates** – refer to products cooked with sugar to attain a concentration of 40-65% or to saturated sucrose level

.40 **Syrup** – refers to a sugar solution whether light, medium or heavy syrup

_____114

.41　　**Thermal Processing** – refers to the method of processing food in hermetically sealed container by applying heat with the right temperature and time, enough to kill microorganisms responsible in the spoilage of food which involve bottling and canning

.42　　**Water Bath** – it is a set up used for canning consisting of a large kettle with fitting cover deep enough to have an inch or two over the tops of the containers of food and an extra 1-2 inch space for boiling with a wooden or metal rack made for holding filled containers; used for processing high acid canned products.

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