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Islamabad



FOOD PROCESSING & PACKAGING TECHNICIAN



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TRAINER GUIDE

National Vocational Certificate Level 3

Version 1 - November, 2019



Implemented by

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

Published by

National Vocational and Technical Training Commission
Government of Pakistan

Headquarter

Plot 38, Kirthar Road, Sector H-9/4, Islamabad, Pakistan
www.navttc.org

Responsible

Director General Skills Standard and Curricula, National Vocational and Technical Training Commission
National Deputy Head, TVET Sector Support Programme, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Layout & design

SAP Communications

Photo Credits

TVET Sector Support Programme

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This document has been produced with the technical assistance of the TVET Sector Support Programme, which is funded by the European Union, the Federal Republic of Germany and the Royal Norwegian Embassy and has been commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ). The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in close collaboration with the National Vocational and Technical Training Commission (NAVTTTC) as well as provincial Technical Education and Vocational Training Authorities (TEVTAs), Punjab Vocational Training Council (PVTC), Qualification Awarding Bodies (QABs) and private sector organizations.

Document Version

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Introduction

Competence-based training helps to bridge the gap between what is taught in training and what tasks will be performed on the job. Training trainees to perform actual job functions helps to ensure that future front-line workers have the skills, knowledge and abilities required to perform their jobs properly, safely and effectively. In addition to competence-based training, assessment based on the performance of actual work competencies helps to ensure that:

- Trainees are performing their work tasks as safely as possible
- Performance gaps are recognized prior to serious incidents
- Training can be implemented to improve competence.

There are significant benefits to competence-based training:

1. Cost effectiveness

Since training activities and assessments in a competence-based approach are goal-oriented, trainers focus on clearly defined areas of skills, knowledge and understanding that their own industry has defined in the competence standards. At the same time, trainees are more motivated to learn when they realize the benefits of improved performance.

2. Efficiency

The transfer gap between the training environment and working on the job is reduced substantially in a competence-based approach. This is because training and assessment are relevant to what needs to be done on the job. As a result, it takes less time for trainees to become competent in the required areas. This, in turn, contributes to improved efficiency where training and assessment are concerned.

3. Increased productivity

When trainees become competent in the competence standards that their own industry has defined, when they know what the performance expectations are and receive recognition for their abilities through successful assessments, they are likely to be more motivated and experience higher job satisfaction. The result is improved productivity for organizations. The communication and constructive feedback between future employers and employees will improve as a result of a competence-based approach, which can also increase productivity.

4. Reduced risk

Using a competence-based approach to training, development, and assessment, employers are able to create project teams of people with complementary skills. A trainee's record of the skills, knowledge and understanding relating to the competence standards they have achieved can be used by a future employer to identify and provide further relevant training and assessment for new skills areas. Competence standards can shape employee development and promotional paths within an organization and give employees the opportunity to learn more competencies beyond their roles. It can also provide organizations with greater ability to scale and flex as needed, thereby reducing the risk they face.

5. Increased customer satisfaction

Employees who have been trained and assessed using a competence-based approach are, by the definition of the relevant competence standards, able to perform the required tasks associated with a job. The knock-on effect is that, in service-related industries, they are able to provide high service levels, thereby increasing customer satisfaction. In production or manufacturing industries, they are able to work closely to industry standards in a more effective and efficient way.

Lesson plans

This manual provides a series of lesson plans that will guide delivery of each module for the *Food Processing & Packaging Technician* qualification. It is important for trainers to be flexible and be ready to adapt lesson plans to suit the context of the subject and the needs of their trainees.

Good teachers acknowledge that CBT means each and every trainee in the class learns at a different speed. The good teacher is prepared to throw aside the day's lesson plan and do something different (and unplanned) for the class even if it means 'writing' a lesson plan for each trainee to match their learning pace for that day or week.

Learning by doing is different from learning theory and then applying it. To learn to do something, trainees need someone looking over their shoulder saying 'it's not quite like that, it's like this', 'you do it like this because ...', or even 'tell me why you chose to do it like this?'

In this way, trainees learn that theoretical knowledge is meaningless if it is not seen in the context of what they are doing. In other words, if a trainee doesn't know why they do something, they will not do it competently (skills underpinned by knowledge = competent performer).

This is how a *Food Processing & Packaging Technician* acquires a practical grasp of the standards expected. It's not by learning it in theory, but because those standards are acquired through correction by people who show what the standards are, and correct the trainee where they do not meet those standards, and where they repeat it correction until they have internalized those standards.

Demonstration of skill

Demonstration or modeling a skill is a powerful tool, which is used, in vocational training. The instructions for trainers for demonstration are as under:

- a) Read the Procedure mentioned in the Trainer Guide for the relevant Learning Unit before demonstration.
- b) Arrange all tools, equipment and consumable material, which are required for demonstration of a skill.
- c) Practice the skill before demonstration to trainees, if possible.
- d) Introduce the skill to trainees clearly at the commencement of demonstration.
- e) Explain how the skill relates to the skill(s) already acquired and describe the expected results or show the objects to trainees.
- f) Carry out demonstration in a way that can be seen by all trainees.
- g) Perform each step slowly and describe each step clearly so that all trainees can hear and understand.
- h) Identify critical or complex steps, or steps that involve safety precautions to be followed.
- i) Explain theoretical knowledge where applicable and ask questions to trainees to test their understanding.

- j) Repeat critical steps in demonstration, if required.
- k) Summarize the demonstration by asking questions to trainees.

FORMAT FOR LESSON PLAN			
Module6: Perform Food Processing			
Learning Unit 1: Prepare Food for Processing			
Methods	Key Notes	Media	Time
The tools, material and techniques used for preparing different types of food stuff for processing			
Introduction			
This session will introduce learners to the tools, techniques and material used for preparing different types of food stuff for processing, using presentation, demonstration, question and answer, and practical skills development.			
Main Body			
<ul style="list-style-type: none"> • Define preparatory operations; (washing, sorting, grading, peeling etc.) • Describe dressing of meat (removal of skin, removal of viscera and cutting of meat etc.) • Explain the process of shelling of eggs and dry fruits. (Candling, washing, breaking, hammering etc.) • Describe the process of batch loading (selection, weighing, put values according to recipe 			

in PLC etc.)
Conclusion
To conclude the session, review the tools, techniques and material used for preparing foods for processing. Give learners the opportunity to ask questions.
Assessment
Question and answer, Group discussion with feedback, observation of practice skills development
Total time: 45 min

Overview of the program

Course: <i>Food Processing & Packaging Technician (Level III)</i>	Total Course Duration: 910 Hrs.
Course Overview:	
<p>In this training program trainee will learn and acquire specialized knowledge and practical skills required to function as a Food Processing & Packaging Technician in Food Processing and Packaging industry. The specific objectives of developing these qualifications are as under:</p> <ul style="list-style-type: none"> • Improve the overall quality of training delivery and setting national benchmarks for training of Food Processing & Packaging Technician in the country. • Provide flexible pathways and progressions to learner enabling them to receive relevant, up-to-date and current skills in Food Industry. • Provide basis for competency-based assessment which is recognized and accepted by employers in modern days. • Establish a standardized and sustainable system of training in consultation with the industry for Food Processing & Packaging Technician in the country. 	

Module	Learning Unit	Duration
Module 1.		30
Module 2.		20
Module 3.		30
Module 4.		40
Module 5.		30
Module 6. Perform Food Processing	LU1. Prepare food for processing LU2. Apply size reduction techniques LU3. Apply extraction techniques	600

Module	Learning Unit	Duration
	<p>LU4. Apply high temperature techniques</p> <p>LU5. Apply low temperature techniques</p> <p>LU6. Apply fermentation techniques</p> <p>LU7. Apply evaporation techniques</p> <p>LU8. Monitor adding of ingredients</p> <p>LU9. Push batches to preservation and for packaging process</p> <p>LU10. Produce beverages</p> <p>LU11. Handle food additives</p> <p>LU12. Perform basic calculation</p>	
<p>Module 7.</p> <p>Perform Packaging as per Manufacturing Order</p>	<p>LU1. Receive packaging materials as per manufacturing order (jars, bottles, trays, boxes, tin box etc.)</p> <p>LU2. Perform vetting for contamination/sterilization</p> <p>LU3. Check packaging materials integrity/quality</p> <p>LU4.</p> <p>LU5. Verify labeled contents as per manufacturing order</p> <p>LU6. Perform over printing</p> <p>LU7. Produce samples to try out different materials and designs</p> <p>LU8. Ensure packaged products meet set requirements</p> <p>LU9. Make tertiary packaging for bulk handling for warehouses storage & shipping/transport</p> <p>LU10. Protect finished product from environmental factors</p>	<p>120</p>
<p>Module 8.</p> <p>Ensure hazards Analysis Critical Control Points (HACCP) & Food Safety Management System</p>	<p>LU1. Apply HACCP principles in the production</p> <p>LU2. Apply food safety management system elements in the production</p> <p>LU3. Participate in internal audit procedures</p>	<p>40</p>

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Module-6

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Trainer's guidelines

Module 6: 072100985 Perform Food Processing			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
LU1: Prepare food for processing	<p>Enable learners to practice using the appropriate tools and equipment for preparing food for processing in a controlled environment.</p> <p>Ensure you cover the following:</p> <p>Enable the trainees to adopt appropriate peeling technique in fruits / vegetables.</p> <p>Enable the trainees to perform shelling of nuts and eggs.</p> <p>Enable the trainees to adopt appropriate cutting technique in fruits, vegetables and meats.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to preparing food for processing in an appropriate practical setting. Ensure that learners have the opportunity to ask questions to support their understanding.</p>	<p>Food Lab</p> <p>Classroom</p> <p>Industrial visit</p>	<p>Video clips</p> <p>Pamphlets</p> <p>Learner guide</p> <p>Handouts</p> <p>Charts</p> <p>Pictorial diagrams</p> <p>Knives set</p> <p>Choppers</p> <p>Mandolin</p> <p>Juicers</p> <p>Blenders</p> <p>Mincers</p>
LU2: Apply size reduction techniques	<p>Enable learners to practice using the appropriate tools and equipment applying size reduction techniques in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to applying size reduction techniques in an appropriate practical setting.</p>	<p>Food Lab</p> <p>Classroom</p> <p>Industrial visit</p>	<p>Video clips</p> <p>Learner guide</p> <p>Handouts</p> <p>Grinder</p> <p>Working models</p> <p>Knives set</p>

Module 6: 072100985 Perform Food Processing			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
	<p>Enable learners to slicing/dicing of food materials. Trainees must be able to perform grinding of spices and condiments.</p> <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>		Cutting boards
<p>LU3: Apply extraction technique</p>	<p>Enable learners to practice using the appropriate tools and equipment for applying extraction techniques in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to applying extraction techniques in an appropriate practical setting.</p> <p>Learners must be able to extract juices from fruits, vegetables and oils from oilseeds.</p> <p>Plan a visit to pulping or juice extraction unit to observe unit operations being conducted. Arrange discussion at the end of visit ask trainees to prepare report regarding visit observations.</p> <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>	<p>Food Lab Classroom Industrial visit</p>	<p>Working models Video clips Learner guide Handouts Charts Documentary Multimedia Juicer Oil extractor</p>
<p>LU4: Apply High temperature techniques</p>	<p>Enable learners to practice using the appropriate tools and equipment for applying High temperature techniques in a controlled environment.</p> <p>Learners must be able to practice and develop</p>	<p>Food Lab Classroom Industrial visit</p>	<p>Samples of heat treated foods Retort Video clips Pamphlets</p>

Module 6: 072100985 Perform Food Processing			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
	<p>their knowledge and skills relating to applying High temperature techniques in an appropriate practical setting.</p> <p>Enable learners to perform pasteurization of liquid foods. Learners must be able to conduct canning of food items.</p> <p>Plan a visit to canning plant to observe application of high temperature at commercial level.</p> <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>		<p>Multimedia</p> <p>Learner guide</p> <p>Handouts</p> <p>Charts</p> <p>Pasteurizer</p>
<p>LU5:</p> <p>Apply low temperature techniques</p>	<p>Enable learners to practice using the appropriate tools and equipment for applying low temperature techniques in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to Apply low temperature technique in an appropriate practical setting.</p> <p>Enable the learners to refrigerate the foods. Trainees must be able to freeze different types of foods. They must be able to select safe temperature for different foods.</p> <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>	<p>Food Lab</p> <p>Classroom</p> <p>Industrial visit</p>	<p>Video clips</p> <p>Pamphlets</p> <p>Learner guide</p> <p>Handouts</p> <p>Flip charts</p> <p>Pictorial diagrams</p> <p>Freezer</p> <p>Refrigerator</p>

Module 6: 072100985 Perform Food Processing			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
LU6: Apply fermentation techniques	<p>Enable learners to practice using the appropriate tools and equipment for applying fermentation techniques in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to applying fermentation techniques in an appropriate practical setting.</p> <p>Enable the learners to prepare fermented bread. Trainees must be able to prepare fermented milk product such as yoghurt.</p> <p>Plan a visit to vinegar plant and explain procedures of vinegar processing. Ensure that learners have the opportunity to ask questions to support their understanding.</p>	Food Lab Classroom Industrial visit	Fermenter Video clips Pamphlets Learner guide Handouts Flip charts Culture media Proofer
LU7: Apply evaporation techniques	<p>Enable learners to practice using the appropriate tools and equipment for applying evaporation techniques in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to applying evaporation techniques in an appropriate practical setting.</p> <p>Enable the learners to prepare flakes and milk powder by drum drier. Trainees must be able to perform drying of vegetables and fruits by cabinet drier.</p> <p>Plan a visit to a dairy powder plant to observe the</p>	Food Lab Classroom Industrial visit	Drying oven Video clips Pamphlets Learner guide Handouts Charts Flow diagrams Cabinet drier Spray drier

Module 6: 072100985 Perform Food Processing			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
	process of drying at commercial scale. Ensure that learners have the opportunity to ask questions to support their understanding.		
LU8: Monitor adding of ingredients	<p>Enable learners to practice using the appropriate tools and equipment for monitoring adding of ingredients in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to monitoring adding of ingredients in an appropriate practical setting.</p> <p>Learners must be able to calculate recipes on percentage or on parts basis. Enable trainees to measure ingredients in weight or volume basis. The learner must be able to perform calibration of balance and glassware. Ensure that learners have the opportunity to ask questions to support their understanding.</p>	Food Lab Classroom Industrial visit	Glassware Cylinders Pipettes Video clips Pamphlets Learner guide Handouts Recipe charts Ingredient diagrams Scales Digital balance
LU9: Push batches to preservation and for packaging process	<p>Enable learners to practice using the appropriate tools and equipment to push the batches for preservation and packaging in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to push the batches for preservation and packaging in an appropriate practical setting.</p> <p>Enable the learners to check the doneness of</p>	Food Lab Classroom Industrial visit	Video clips Pamphlets Learner guide Handouts Charts

Module 6: 072100985 Perform Food Processing			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
	batch by physical assessment. Ensure that learners have the opportunity to ask questions to support their understanding.		
LU10: Produce beverages	<p>Enable learners to practice using the appropriate tools and equipment for producing beverages in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to producing beverages in an appropriate practical setting. Enable the learners to produce carbonated drink.</p> <p>Trainees must be able to prepare fruit drink, cordial and nectar. The learners must be able to develop the recipe or make a change in existing recipe in case of replacement or substitution of ingredients. The trainee must be able to describe the role of additives or food ingredients in processing.</p> <p>Plan a visit to beverage industry. Ask trainees to compile report regarding beverage processing after visit. Ensure that learners have the opportunity to ask questions to support their understanding.</p>	Food Lab Classroom Industrial visit	Juicer Crusher Mixer Video clips Pamphlets Learner guide Handouts Charts Food Rules book. Recipe book Carbonation unit
LU11: Handle food additives	<p>Enable learners to practice using the appropriate tools and equipment for handling food additives in a controlled environment.</p> <p>Learners must be able to practice and develop</p>	Food Lab Classroom Industrial visit	Video clips Pamphlets Learner guide

Module 6: 072100985 Perform Food Processing			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
	<p>their knowledge and skills relating to handling food additives in an appropriate practical setting. Enable learners to select recommended food additive to be used in food processing. The learners must be able to know the E numbers allotted to food additives with their specific use as well as regulatory status.</p> <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>		<p>Handouts Charts</p>
<p>LU12: Perform basic calculation</p>	<p>Enable learners to practice using the appropriate tools and equipment for performing basic calculations in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to performing basic calculations in an appropriate practical setting.</p> <p>Enable learners to calculate recipes by addition, multiplication or percentage. Ensure that learners have the opportunity to ask questions to support their understanding.</p>	<p>Food Lab Classroom</p>	<p>Templates Pamphlets Learner guide Handouts Conversion Charts Chart showing units Formula chart</p>

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Module 7: 072100983 **Perform Packaging as per Manufacturing Order**

Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
<p>LU1: Receive packaging materials as per manufacturing order (jars, bottles, trays, boxes, tin box etc.)</p>	<p>Enable learners to practice using the appropriate tools and equipment for receiving the packaging materials as per manufacturing order (jars, bottles, trays, boxes, tin box etc.) in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to receiving the packaging materials as per manufacturing order (jars, bottles, trays, boxes, tin box etc.) in an appropriate practical setting.</p> <p>The learners must be able to calculate the quantity of different packaging based on batch size or production target. Trainees must understand the units of measurement to be used for receiving packaging like Nos., meters & rolls etc. they must be able to estimate secondary and tertiary packaging also.</p> <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>	<p>Food Lab Classroom Industrial visit</p>	<p>Tin cans Sleeves Trays Cartons Video clips Pamphlets Learner guide Handouts Flip charts</p>

Module 7: 072100983 **Perform Packaging as per Manufacturing Order**

Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
<p>LU2: Perform vetting for contamination/sterilization</p>	<p>Enable learners to practice using the appropriate tools and equipment for performing tests to vet the contamination/sterilization of packaging materials in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to performing test to vet the contamination/sterilization of packaging materials in an appropriate practical setting.</p> <p>Enable learners to Perform leakage test in cans or jars. Ensure that learners have the opportunity to ask questions to support their understanding.</p>	<p>Food Lab Classroom Industrial visit</p>	<p>Video clips Pamphlets Learner guide Handouts Flip charts Tin Cans Glass jars Pet bottles</p>

Module 7: 072100983 **Perform Packaging as per Manufacturing Order**

Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
<p>LU3: Check packaging materials integrity/quality</p>	<p>Enable learners to practice using the appropriate tools and equipment for checking the integrity / quality of packaging materials in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to checking the integrity / quality of packaging materials in an appropriate practical setting. Enable the learners to perform the following:</p> <ul style="list-style-type: none"> • Measure the dimensions of materials • Measure the gauge of materials • Check the fluting of cartons • Check the adhesive power of tapes • Check the size of lids, sleeves and seals. • Assure Grammage of papers or cartons • Check the printing of packaging as product name, brand name, logo, color shade etc. <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>	<p>Food Lab Classroom Industrial visit</p>	<p>Samples of cartons, trays, bottles, cans etc. Video clips Pamphlets Learner guide Handouts Screw gauge Vernier caliper</p>
<p>LU4:</p>			

Module 7: 072100983 **Perform Packaging as per Manufacturing Order**

Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
<p>LU5: Verify labeled contents as per manufacturing order</p>	<p>Enable learners to practice using the appropriate tools and equipment for verifying labeled contents as per manufacturing order in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to verifying labeled contents as per manufacturing order in an appropriate practical setting.</p> <p>The learners must be able to verify the following on packaging labels:</p> <ul style="list-style-type: none"> • Logo of organization • Nutrition facts of product • Volume or weight or Nos. of product to be filled • Color shades of printing • Spellings of written information on label • Name of organization • Verify printing of special offers / orders on labels <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>	<p>Food Lab Classroom Industrial visit</p>	<p>Samples of packaging labels and materials. Video clips Pamphlets Learner guide Handouts</p>

Module 7: 072100983 **Perform Packaging as per Manufacturing Order**

Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
<p>LU6: Perform over printing</p>	<p>Enable learners to practice using the appropriate tools and equipment for performing over printing in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to performing over printing in an appropriate practical setting.</p> <p>The learners must be able to stamp the package regarding batch No., expiry and date.</p> <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>	<p>Food Lab Classroom Industrial visit</p>	<p>Laser printer Video clips Pamphlets Learner guide Handouts Flip charts</p>
<p>LU7: Produce samples to try out different materials and designs</p>	<p>Enable learners to practice using the appropriate tools and equipment for producing samples to try out different materials and designs in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to producing samples to try out different materials and designs in an appropriate practical setting.</p> <p>The learners must be able to check the packaging materials of new designs & alternate materials in addition to routine or running materials. They must be able to perform comparison of existing & new materials in terms of quality and quantity.</p> <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>	<p>Food Lab Classroom Industrial visit</p>	<p>Samples of packaging materials. Video clips Pamphlets Learner guide Handouts Working models</p>

Module 7: 072100983 **Perform Packaging as per Manufacturing Order**

Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
<p>LU8: Ensure packaged products meet set requirements</p>	<p>Enable learners to practice using the appropriate tools and equipment for ensuring packaged products meet set requirements in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to ensuring packaged products meet set requirements in an appropriate practical setting.</p> <p>The learners must be able to check volume and weight of packaged contents to compare with standard. Ensure seals of packaged materials, integrity of lids as well as cans or jars etc.</p> <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>	<p>Food Lab Classroom Industrial visit</p>	<p>Cans Jars Cartons Seals Animations Working models Video clips Pamphlets Learner guide Handouts Flip charts</p>

Module 7: 072100983 **Perform Packaging as per Manufacturing Order**

Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
<p>LU9: Make tertiary packaging for bulk handling for warehouses storage & shipping/transport</p>	<p>Enable learners to practice using the appropriate tools and equipment for making tertiary packaging for bulk handling for warehouses storage & shipping / transport in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to making tertiary packaging for bulk handling for in an appropriate practical setting.</p> <p>Enable the learners to perform the following:</p> <ul style="list-style-type: none"> • Preparing tertiary packaging by folding the sheets • Closing and sealing of tertiary packaging • Labeling of carton • Transferring cartons by trollies or fork lifter <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>	<p>Food Lab Classroom Industrial visit</p>	<p>Cartons Trays Dispensers Working models Video clips Pamphlets Learner guide Handouts</p>

Module 7: 072100983 **Perform Packaging as per Manufacturing Order**

Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
<p>LU10: Protect finished product from environmental factors</p>	<p>Enable learners to practice using the appropriate tools and equipment for protecting finished product from environmental factors in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to protecting finished product from environmental factors in an appropriate practical setting.</p> <p>The learners must be able to understand and apply measures to avoid sunlight, rainfall or humidity problems.</p> <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>	<p>Food Lab Classroom Industrial visit</p>	<p>Video clips Pamphlets Learner guide Handouts Flip charts</p>

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Module 8: 072100984 Ensure hazards Analysis Critical Control Points (HACCP) & Food Safety Management System

Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
<p>LU1: Apply HACCP principles in the production</p>	<p>Enable learners to practice using the appropriate tools and equipment for applying HACCP principles in the production in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to applying HACCP principles in the production in an appropriate practical setting. Learners must be able to identify chemical, biological and physical hazard in food processing line.</p> <p>Plan a visit to HACCP certified industry to observe implementation of HACCP. Arrange briefing of industry representative before start of visit. At the end of visit a group discussion should be arranged to answer the queries of learners. Ask learners to submit report regarding visit highlighting important points.</p> <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>	<p>Food Lab Classroom Industrial visit</p>	<p>Animations Video clips Pamphlets Learner guide Handouts Flip charts Flow diagrams</p>

Module 8: 072100984 Ensure hazards Analysis Critical Control Points (HACCP) & Food Safety Management System			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
<p>LU2: Apply food safety management system elements in the production</p>	<p>Enable learners to practice using the appropriate tools and equipment for applying food safety management system elements in the production in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to applying food safety management system elements in the production in an appropriate practical setting.</p> <p>The learners must be able to control temperature sensing devices, humidity measuring devices, able to interpret different signs and beeps displaying on machines.</p> <p>Enable the learners to apply corrective or preventive measures at CCP of food processing line. Ensure that learners have the opportunity to ask questions to support their understanding.</p>	<p>Food Lab Classroom Industrial visit</p>	<p>Flow Diagrams Video clips Pamphlets Learner guide Handouts Flip charts</p>

Module 8: 072100984 Ensure hazards Analysis Critical Control Points (HACCP) & Food Safety Management System

Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
LU3: Participate in internal audit procedures	Enable learners to practice using the appropriate tools and equipment for participating in internal audit procedures in a controlled environment. Learners must be able to practice and develop their knowledge and skills relating to participating in internal audit procedures in an appropriate practical setting. Enable the learners to fill audit documents or sheets and prepare files of audit. Ensure that learners have the opportunity to ask questions to support their understanding.	Food Lab Classroom Industrial visit	Video clips Pamphlets Learner guide Handouts Flip charts

Frequently Asked Questions

<p>1. What is Competency Based Training (CBT) and how is it different from currently offered trainings in institutes?</p>	<p>Competency-based training (CBT) is an approach to vocational education and training that places emphasis on what a person can do in the workplace as a result of completing a program of training. Compared to conventional programs, the competency based training is not primarily content based; it rather focuses on the competence requirement of the envisaged job role. The whole qualification refers to certain industry standard criterion and is modularized in nature rather than being course oriented.</p>
<p>2. What is the passing criterion for CBT certificate?</p>	<p>You shall be required to be declared “Competent” in the summative assessment to attain the certificate.</p>
<p>3. What are the entry requirements for this course?</p>	<p>The entry requirement for this course is Middle or equivalent.</p>
<p>4. How can I progress in my educational career after attaining this certificate?</p>	<p>You shall be eligible to take admission in the National Vocational Certificate in level-5, DAE in Food Processing Technology or equivalent course. In certain case, you may be required to attain an equivalence certificate from The Inter Board Committee of Chairmen (IBCC).</p>
<p>5. If I have the experience and skills mentioned in the competency standards, do I still need to attend the course to attain this certificate?</p>	<p>You can opt to take part in the Recognition of Prior Learning (RPL) program by contacting the relevant training institute and getting assessed by providing the required evidences.</p>
<p>6. What is the entry requirement for</p>	<p>There is no general entry requirement. The institute shall assess you, identify your competence gaps and offer</p>

Recognition of Prior Learning program (RPL)?	you courses to cover the gaps; after which you can take up the final assessment.
7. Is there any age restriction for entry in this course or Recognition of Prior Learning program (RPL)?	There are no age restrictions to enter this course or take up the Recognition of Prior Learning program
8. What is the duration of this course?	The duration of the course work is 2 years (4 Levels).
9. What are the class timings?	The classes are normally offered 25 days a month from 08:00am to 01:30pm. These may vary according to the practices of certain institutes.
10. What is equivalence of this certificate with other qualifications?	As per the national vocational qualifications framework, the level-4 certificate is equivalent to Matriculation. The criteria for equivalence and equivalence certificate can be obtained from The Inter Board Committee of Chairmen (IBCC).
11. What is the importance of this certificate in National and International job market?	This certificate is based on the nationally standardized and notified competency standards by National Vocational and Technical Training Commission (NAVTTTC). These standards are also recognized worldwide as all the standards are coded using international methodology and are accessible to the employers worldwide through NAVTTTC website.
12. Which jobs can I get after attaining this certificate? Are there job for this certificate in public sector as well?	You shall be able to take up jobs in Food Processing industry like, Dairy industry, Beverage industry, baking and confectionery industry, meat and egg industry as well as fruits/vegetable processing industry.
13. What are possible career progressions in industry after attaining this	You shall be able to progress up to the level of supervisor after attaining sufficient experience, knowledge and skills during the job. Attaining additional

certificate?	relevant qualifications may aid your career advancement to even higher levels.
14. Is this certificate recognized by any competent authority in Pakistan?	This certificate is based on the nationally standardized and notified competency standards by National Vocational and Technical Training Commission (NAVTTTC). The official certificates shall be awarded by the relevant certificate awarding body.
15. Is on-the-job training mandatory for this certificate? If yes, what is the duration of on-the-job training?	On-the-job training is not a requirement for final / summative assessment of this certificate. However, taking up on-the-job training after or during the course work may add your chances to get a job afterwards.
16. How much salary can I get on job after attaining this certificate?	The minimum wages announced by the Government of Pakistan in 2019 are PKR 17,500. This may vary in subsequent years and different regions of the country. Progressive employers may pay more than the mentioned amount.
17. Are there any alternative certificates which I can take up?	There are some short courses offered by some training institutes on this subject. Some institutes may still be offering conventional certificate courses in the field.
18. What is the teaching language of this course?	The teaching language of this course is Urdu and English.
19. What is the examination / assessment system in this program?	Competency based assessments are organized by training institutes during the course which serve the purpose of assessing the progress and preparedness of each student. Final / summative assessments are organized by the relevant qualification awarding bodies at the end of the certificate program. You shall be required to be declared "Competent" in the summative assessment to attain the certificate.
20. Does this certificate enable me to work as freelancer?	You can start your small business of Baking, juice processing, carbonated beverages and confectionery etc. You may need additional skills on entrepreneurship to support your initiative.

Test Yourself (Multiple Choice Questions)

Module 06

29. What type of fruit / vegetable is peeled by Abrasive peeler?
- A. Apricot
 - B. Carrot
 - C. Plums
 - D. Tomatoes
30. What does Lye peeler peel?
- A. Apricot
 - B. Carrot
 - C. Potatoes
 - D. Turnip
31. What is cutting technique that is used in pineapple?
- A. Slicing
 - B. Dicing
 - C. Pitting
 - D. Coring
32. How fish is cut to prepare it for frying?
- A. Steaking
 - B. Filleting
 - C. Pitting
 - D. Coring
33. How fat is extracted from fatty tissues of animals?
- A. Shelling
 - B. Rendering
 - C. Pressing
 - D. Trimming

34. How pathogenic microorganisms are killed in liquid milk?
- A. Pasteurization
 - B. Sterilization
 - C. Tyndallisation
 - D. Distillation
35. Which is the process used for destruction of all spoilage microorganisms in foods?
- A. Pasteurization
 - B. Sterilization
 - C. Tyndallisation
 - D. Distillation
36. What is the temperature used in UHT processing?
- A. 71 °C
 - B. 85 °C
 - C. 95 °C
 - D. 140 °C
37. How green color in plant materials can be fixed during processing?
- A. Pasteurization
 - B. Blanching
 - C. Vacuuming
 - D. Canning
38. What is example of flavour enhancer?
- A. Monosodium glutamate
 - B. Sodium chloride
 - C. Calcium chloride
 - D. Sodium benzoate
39. What type of heating method is used in bread?
- A. Bar B Queuing
 - B. Frying
 - C. Boiling
 - D. Baking

40. What type of freezing method is attained by liquefied cold gases?
- A. Sharp freezing
 - B. Blast freezing
 - C. Cryogenic freezing
 - D. Immersion freezing
41. What is particular example of alcoholic fermentation?
- A. Wines
 - B. Yoghurt
 - C. Pickles
 - D. Vinegar
42. What percentage of acetic acid does vinegar contain?
- A. 1%
 - B. 2%
 - C. 3%
 - D. 4%
43. What type of dried product is prepared by spray drier?
- A. Dried apricot
 - B. Dried plum
 - C. Dried vegetables
 - D. Dried Milk
44. What is the type of liquid that quenches our thirst in addition to energy is:
- A. Whey
 - B. Soup
 - C. Drinks
 - D. Brine
45. What is the common preservative used in all food preparations?
- A. Calcium propionate
 - B. Ammonium chloride
 - C. Sodium benzoate
 - D. Potassium sulphate
47. How particular taste, texture and aroma are developed in cheddar cheese?
- A. Freezing
 - B. Ripening
 - C. Scalding
 - D. Blanching

Module 07

48. What type of chemical can sterilize the environment for packaging of foods?
- A. H_2
 - B. H_2O
 - C. H_2O_2
 - D. H_3O
49. How packaging material is vetted before use to be free from sustainable micro flora?
- A. TPC
 - B. TVC
 - C. TSS
 - D. TDS
50. By which method integrity of tetra pack seals is determined?
- A. Ink
 - B. Air
 - C. Weight
 - D. Water
51. What type of term is related to storage and warehousing?
- A. MSNF
 - B. FIFO
 - C. PIPO
 - D. MFGD
52. What is the condition in which bad smell and taste is produced in foods containing fats during storage?
- A. Browning
 - B. Bleaching
 - C. Rancidity
 - D. Caramelization

Module 08

53. How much principles are included in HACCP system?
- A. 3
 - B. 5
 - C. 7
 - D. 9
54. What is food safety management system?
- A. SGS
 - B. ISO 17025
 - C. HACCP
 - D. BVQI
55. Identify the area where HACCP is applied?
- A. Wood shops
 - B. Metal works
 - C. Meat workstation
 - D. Automobiles
56. By which of the following, severity of hazard can be managed?
- A. CCL
 - B. CCP
 - C. SOP
 - D. SSOP

KEY for MCQ's

Sr. #	Ans.	Sr. #	Ans.	Sr. #	Ans.	Sr. #	Ans.
29	B	36	D	43	D	50	A
30	A	37	B	44	C	51	B
31	B	38	A	45	C	52	C
32	B	39	D	46	B	53	C
33	B	40	C	47	B	54	C
34	A	41	A	48	C	55	C
35	B	42	D	49	B	56	B

