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FOOD PROCESSING & PACKAGING TECHNICIAN



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TRAINER GUIDE

National Vocational Certificate Level 1

Version 1 - November, 2019



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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			
Module 6: 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 1)</i>	Total Course Duration: 190 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. Comply with Work Health and Safety Policies		30 Hrs.
Module 2. Obey the Workplace Policies and Procedures		20 Hrs.
Module 3. Follow Basic Communication Skills (General)		40 Hrs.
Module 4.		40 Hrs.

Module	Learning Unit	Duration
Operate Computer Functions(General)		
Module 5. Adopt Basic Good Manufacturing Practices (GMP) for Food Processing & Packaging	LU1. Apply basic GMP requirements in regard to layout of premises, workspace LU2. Apply Basic GMP requirements in regard to personal hygiene LU3. Apply basic GMP requirements in regard to food processing, including rework LU4. Apply basic GMP requirements in regard to food packaging LU5. Apply basic GMP requirements in regard to documentation and records LU6. Apply basic GMP requirements to production quality control and in process controls LU7. Apply basic GMP requirements in regard to storage, warehousing and distribution LU8. Apply basic GMP requirements in regard to management of purchased materials LU9. Apply basic GMP requirements in regard to cleaning and sanitation LU10. Apply basic GMP requirements in regard to measures for prevention of cross contamination LU11. Apply basic GMP requirements in regard to Pest Management Apply basic GMP requirements in regard to food defense	60 Hrs.

Trainer's guidelines

Module 5: 072100979 Adopt Basic Good Manufacturing Practices (GMP) for Food Processing & Packaging			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
LU1: Apply basic GMP requirements in regard to layout of premises, workspace	<p>Enable learners to practice using the appropriate tools and equipment for applying basic GMP requirements in regard to layout of premises and workspace in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to layout of different unit operations of a process line, ventilation, air circulation, lightening of process area, entry of raw materials, exit of finished goods, positioning of wash/shower area to control cross contamination in an appropriate practical setting.</p> <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>	Classroom Food Lab Industrial visit	Video clips Pamphlets Learner guide Handouts Flip charts Sign boards Flow diagrams Models Animations
LU2: Apply Basic GMP requirements in regard to personal hygiene	<p>Enable learners to practice using the appropriate tools and equipment for applying basic GMP requirements in regard to personal hygiene in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to personal hygiene as hand washing, nail trimming, wearing lab coat, removing jewelry, covering head, wearing mask on mouth and nose, wearing</p>	Classroom Food Lab Industrial visit	Animations Video clips Pamphlets Learner guide Handouts Flip charts Sign boards Models

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Module-5

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Module 5: 072100979 Adopt Basic Good Manufacturing Practices (GMP) for Food Processing & Packaging			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
	gloves and wearing safety shoes in an appropriate practical setting. Ensure that learners have the opportunity to ask questions to support their understanding.		
LU3: Apply basic GMP requirements in regard to food processing, including rework	Enable learners to practice using the appropriate tools and equipment for food processing and rework in a controlled environment. Learners must be able to practice and develop their knowledge and skills relating to applying basic GMP requirements in regard to food processing (Preparing, blanching, heating, cooling, fermenting, packing and storing etc.) in an appropriate practical setting. Ensure that learners have the opportunity to ask questions to support their understanding.	Classroom Food Lab Industrial visit	Video clips Pamphlets Learner guide Handouts Flip charts Sign boards
LU4: Apply basic GMP requirements in regard to food packaging	Enable learners to practice using the appropriate tools and equipment for applying basic GMP requirements in food packaging under controlled environment. Learners must be able to practice and develop their knowledge and skills relating to applying basic GMP standards in relation to food packaging in an appropriate practical setting. Discuss mishaps of packaged foods due to non-application of GMP's during packaging.	Classroom Food Lab Industrial visit	Video clips Pamphlets Learner guide Handouts Flip charts Animations

Module 5: 072100979 Adopt Basic Good Manufacturing Practices (GMP) for Food Processing & Packaging			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
	Ensure that learners have the opportunity to ask questions to support their understanding.		
LU5: Apply basic GMP requirements in regard to documentation and records	<p>Enable learners to practice using the appropriate tools and equipment for applying basic GMP requirements regarding documentation and record keeping in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to complete various documents like log sheet, log book, requisitions, invoices and maintaining files or folders in an appropriate practical setting.</p> <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>	Classroom Food Lab Industrial visit	Video clips Pamphlets Learner guide Handouts Folders Log sheets Log books
LU6: Apply basic GMP requirements to production quality control and in process controls	<p>Enable learners to practice using the appropriate tools and equipment for applying basic GMP requirements to product quality control as well as in process quality control in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to applying basic GMP requirements to production quality control and in process testing in an appropriate practical setting.</p> <p>The learners must be able to place the testing tools and accessories on their designated area in quality control lab. Observe the trainee for rinsing</p>	Classroom Food Lab Industrial visit	Video clips Pamphlets Learner guide Handouts Flip charts Log sheets

Module 5: 072100979 Adopt Basic Good Manufacturing Practices (GMP) for Food Processing & Packaging			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
	of glassware before and after use. The learners must be able to collect the sample as per SOP and label it for further use in quality control lab. Ensure that learners have the opportunity to ask questions to support their understanding.		
LU7: Apply basic GMP requirements in regard to storage, warehousing and distribution	Enable learners to practice using the appropriate tools and equipment for applying basic GMP requirements in regard to storage, warehousing and distribution in a controlled environment. Learners must be able to practice and develop their knowledge and skills relating to applying basic GMP requirements in regard to storage, warehousing and distribution as First In First Out (FIFO), stacking height, pelleting and checking different gauges in an appropriate practical setting. Ensure that learners have the opportunity to ask questions to support their understanding.	Classroom Food Lab Industrial visit	Video clips Pamphlets Learner guide Handouts Flip charts Sign boards Gauges (Temperature, Pressure, and Humidity etc.)
LU8: Apply basic GMP requirements in regard to management of purchased materials	Enable learners to practice using the appropriate tools and equipment for applying basic GMP requirements in regard to management of purchased materials in a controlled environment. Learners must be able to practice and develop their knowledge and skills relating to applying basic GMP requirements in regard to management of purchased materials in an	Classroom Food Lab Industrial visit	Pamphlets Learner guide Handouts Flip charts Specimen of different invoices

Module 5: 072100979 Adopt Basic Good Manufacturing Practices (GMP) for Food Processing & Packaging

Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
	<p>appropriate practical setting.</p> <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>		
<p>LU9: Apply basic GMP requirements in regard to cleaning and sanitation</p>	<p>Enable learners to practice using the appropriate tools and equipment for applying basic GMP requirements in regard to cleaning and sanitation in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to applying basic GMP requirements in case of CIP (Cleaning In Place), COP (Cleaning Out Place), dry cleaning / wet cleaning, schedule of cleaning in an appropriate practical setting.</p> <p>The learners must be able to prepare cleaning solutions of particular strength and to apply on machines or parts according to recommended procedures.</p> <p>Ensure that learners have the opportunity to ask questions to support their understanding.</p>	<p>Classroom Food Lab Industrial visit</p>	<p>Video clips Pamphlets Learner guide Handouts Flip charts Sign boards</p>
<p>LU10: Apply basic GMP requirements in regard to measures for prevention of cross contamination</p>	<p>Enable learners to practice using the appropriate tools and equipment for applying basic GMP requirements in regard to measures for prevention of cross contamination in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to applying</p>	<p>Classroom Food Lab Industrial visit</p>	<p>Video clips Pamphlets Learner guide Handouts Flip charts</p>

Module 5: 072100979 Adopt Basic Good Manufacturing Practices (GMP) for Food Processing & Packaging

Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
	<p>basic GMP requirements in regard to measures for prevention of cross contamination in an appropriate practical setting. Ensure that learners have the opportunity to ask questions to support their understanding.</p>		<p>Sign boards</p>
<p>LU11: Apply basic GMP requirements in regard to Pest Management</p>	<p>Enable learners to practice using the appropriate tools and equipment for applying basic GMP requirements in regard to Pest Management in a controlled environment.</p> <p>Learners must be able to practice and develop their knowledge and skills relating to applying basic GMP requirements in regard to Pest Management in an appropriate practical setting. Ensure that learners have the opportunity to ask questions to support their understanding.</p>	<p>Classroom Food Lab Industrial visit</p>	<p>Video clips Pamphlets Learner guide Handouts Flip charts Sign boards</p>
<p>LU12: Apply basic GMP requirements in regard to food defense</p>	<p>Enable learners to practice using the appropriate tools and equipment for applying basic GMP requirements in regard to food defense in a controlled environment. Learners must be able to practice and develop their knowledge and skills relating to applying basic GMP requirements in regard to food defense in an appropriate practical setting.</p> <p>Make groups of trainees in class; assign a particular food industry to each group to enlist food defense activities. Discuss reports of all</p>	<p>Classroom Food Lab Industrial visit</p>	<p>Animations Video clips Pamphlets Learner guide Handouts Flip charts Sign boards</p>

Module 5: 072100979 Adopt Basic Good Manufacturing Practices (GMP) for Food Processing & Packaging			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
	groups in class and then summarize to clear the concepts. Ensure that learners have the opportunity to ask questions to support their understanding.		

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 06 months (Level-I).
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 05

1. Is a substance which cannot be used economically?
 - A. Product
 - B. Co product
 - C. By product
 - D. Waste
2. What type of fire can be controlled by A type Fire extinguisher?
 - A. Wood
 - B. Gasoline
 - C. Electric short circuit
 - D. Kitchen fire
3. What type of hazard can be caused by bacteria & viruses?
 - A. Physical
 - B. Chemical
 - C. Biological
 - D. Allergan
4. Which of the following is related to environment management system?
 - A. ISO 9000
 - B. ISO 14000
 - C. ISO 20000
 - D. ISO 22000
5. What is the missing M in 4M's theory that includes Men, Materials and Methods?
 - A. Maintenance
 - B. Management
 - C. Machines
 - D. Mutual

6. Which of the following is related to periodic medical examination of employees handling food items?

- A. Sanitation
- B. Cleanliness
- C. Hygiene
- D. Equipment safety

7. What is accidental induction of substances in foods during handling, processing or storage?

- A. Contaminant
- B. Adulterant
- C. Additive
- D. Addict

KEY for MCQ's

Sr. #	Ans.	Sr. #	Ans.	Sr. #	Ans.	Sr. #	Ans.
1	D	2	A	3	C	4	B
5	C	6	C	7	A		

