



National Competency Standards Level-2
For
"Tunnel Farming, Green House & Agribusiness"
(Off-season Vegetable production & Agribusiness)





National Competency Standards for “Tunnel Farming, Greenhouse & Agribusiness”



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- *Mr. Mujeeb ur Rehman, Director General (Skills Standards and Curricula) NAVTTC*
- *Mr. Sikandar Masood, Director (Skills Standards and Curricula), NAVTTC*
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NAVTTC team under the supervision of Dr. Faheem Khan, Executive Director, NAVTTC, initiated development of CBT & A based qualifications for 200 traditional / hi-tech trades under the Prime Minister “skill for all” Program.

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1. Introduction

Agriculture is considered as the backbone of Pakistan's economy, which accounts for about 18.9% of Pakistan's GDP and employs about 42.3% of the labor force. Where agriculture is considered as the largest sector that supports GDP, horticulture sector (fruit and vegetables) contributes only 11 % to the total value addition. Pakistan exports vegetables to Afghanistan, Malaysia, Russia, Bahrain, UAE and Sri Lanka but not impressive figures. Despite favorable climatic and cropping condition Pakistan has repeatedly seen shortages of different vegetables like onions or tomatoes in the market that caused price rise and difficulty for many people. More than 35 varieties of vegetables are growing in different climatic zones in different provinces of Pakistan. Many Surveys reports different reasons for low production of vegetables in Pakistan. The government in history executed various projects to urge the farmer community for cultivation of vegetables but due to lack of technical skills and limited resources, farmers have not adopted this sector in a very impressive way.

Vegetable production can be heightening by improving cultivation techniques and enhancing profitability for farmers. Off-season vegetable production is also an important technique to enhance profits and meet market demand. Production of vegetables out of normal season through different techniques is called "off-season vegetable". Growing Off-season vegetables not only provides fresh vegetables to the daily dietary meal of the consumers but also helps farmers to get abnormal profit as supply in the off-season is always lower than that of its demand.

Therefore, the importance of knowledge related to off-season vegetable production through the latest techniques makes this diploma very valuable not only in agriculture but also in its usefulness in all areas of our daily life. Market demands for qualified workers are therefore a need for time and can only be addressed by developing specific skills standards in partnership with all stakeholders and industry experts. Recognizing this fact, the National Vocational and Technical Training Commission (NAVTTC) has developed the National Vocational Qualifications Framework (NVQF) for tunnel farming, Greenhouse and agri. Business (off season vegetable production) qualifications. These competency standards have been developed by the Qualification Development Committee (QDC) and validated by the Qualification Validation Committee (QVC) with representation from the country's leading departments (IAGS, PU Lahore, UVAS, UAF, PCSIR and ARI KPK).



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2. Purpose of the Qualification

The aim of this qualification is to set high and applicable professional standards for all stake holders in agriculture sector. The basic goals of establishing these credentials are as follows:

1. Equip with the latest off-season vegetable production techniques
2. Improve trainees' professional competence
3. Provide opportunities for recognition of non-formal or informal skills
4. Raise standard and efficacy of scientific training and assessment
5. Improve crop production through the best management skills
6. Enable the existing workforce to learn new technologies and methods
7. Producing a skilled workforce for off-season vegetable production



3. Levelling of Core Competencies of the Qualification

Code	Competency Standard	Category	Level	Credit
CS1	Operate equipment/machinery used in off season vegetable production	Technical	2	12
CS2	perform basic field operations for off season vegetable production	Technical	2	10
CS3	Identify produce maturity	Technical	2	10
CS4	Perform harvesting	Technical	2	10
CS5	Perform Sorting and Grading	Technical	2	8
CS6	Maintain Clean and efficient workplace	Generic	2	2
CS7	Adopt Safety Regulations, Labor Protection Laws, Environmental Protection Laws at Workplace	Generic	2	2
CS8	Perform Personal Health and Safety Guidelines	Generic	2	2
CS9	Apply Work Health and Safety Practices (WHS)	Generic	2	2
CS10	Contribute to Work Related Health and Safety (WHS) Initiatives	Generic	2	2

4. Date of Validation

The level 5 of National qualification on Tunnel Farming, Greenhouse & Agribusiness has been validated by the Qualifications Validation Committee (QVC) members on January 12-16, 2021 at PITAC, Lahore and will remain valid for ten years i.e. **15 Jan, 2031**

5. Date of Review

The level 5 of National qualification on Tunnel Farming, Greenhouse & Agribusiness has been validated by the Qualifications Validation Committee (QVC) members on January 12-16, 2021 at PITAC, Lahore and shall be reviewed after three years i.e. 15-01-2024.

6. Codes of Qualifications

The International Standard Classification of Education (ISCED) is a framework for assembling, compiling and analyzing cross-nationally comparable statistics on education and training. ISCED codes for these qualifications are assigned as follows:



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ISCED Classification for Tunnel Farming, Greenhouse & Agribusiness Level 2	
Code	Description
Farm Helper(Level 2)	
CS1	Operate equipment/machinery used in off season vegetable production
CS2	perform basic field operations for off season vegetable production
CS3	Identify produce maturity
CS4	Perform harvesting
CS5	Perform Sorting and Grading
CS6	Maintain Clean and efficient workplace
CS7	Adopt Safety Regulations, Labor Protection Laws, Environmental Protection Laws at Workplace
CS8	Perform Personal Health and Safety Guidelines
CS9	Apply Work Health and Safety Practices (WHS)
CS10	Contribute to Work Related Health and Safety (WHS) Initiatives



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7. Members of Qualification Development Committee

The following members participated in the qualification development process on 23rd to 27th November’2020 at PITAC, Lahore.

S#	Name	Designation
1.	Dr.M. Nasir Subhani	Associate Professor – PU, Lahore
2.	Dr. Sumaira Maqsood	Assistant Professor – IAS, PU, Lahore
3.	Dr. Waheed Akram	Post Doc. Scholar, Vegetable Research Institute, Academy of Agricultural Sciences Guangzhou China
4.	Dr. Yousaf Noor	Senior Research Officer, Directorate of Soil and Plant Nutrition, ARI, Tarnab Peshawar
5.	Mr. Malik Fiaz Hussain Ferdosi	Assistant Professor – IAS, PU, Lahore
6.	Mr. Adnan Zahid	Lecturer – IAS, PU, Lahore
7.	Ms. Hina Ashraf	PhD Scholar – IAS, PU, Lahore
8.	Mr. Saeed Ahmed	UVAS, Pattoki
9.	Mr. Muhammad Asif	Master Trainer(Off Season Vegetable Production), Lahore
10.	Mr. Muzammil Usman Khan	Consultant (Greenhouse/Off Season Vegetable Production), Punjab
11.	Engr. Danish Khan	DACUM Facilitator
12.	Mr. Muhammad Ishaq	Deputy Director/ Coordinator –(Skills Standards and Curricula) NAVTTC HQ



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8. Members of Qualification Validation Committee

The following members participated in the qualification validation process on 12-01-2021 to 16-01-2021 at PITAC, Lahore.

S#	Name	Designation
1.	Dr. Adnan Zahid	Associate Prof (IAGS,PU, Lahore)
2.	Dr. Sumaira Maqsood	Associate Prof (IAGS,PU, Lahore)
3.	Mr. Farhan Mehmood	Parks and Horticulture Authority, Rawalpindi
4.	Mr. Muhammad Faheem	Research Associate(Agriculture University Rawalpindi)
5.	Ms. Hadia Maqsood	Master Trainer, Seasonal Vegetables Lahore
6.	Mr. Mozzam Anees	Lecturer(IAGS,PU, Lahore)
7.	Ms. Noor Ul Ain	M.Phil. Scholar, (IAGS,PU, Lahore)
8.	Mr. Mushtaq Ahmed	Representative (P-TEVTA), Lahore
9.	Mr. Faqir Muhammad Kafi	PBTE Representative, Lahore
10.	Dr. Mehmood ur Rehman	Representative (S-TEVTA), Khairpur
11.	Mr. Ibrahim Anwar	KPK TEVTA
12.	Engr. Danish Khan	DACUM Facilitator
13.	Mr. Muhammad Ishaq	Deputy Director/ Coordinator – (Skills Standards and Curricula) NAVTTC HQ

9. Entry Requirements

The entry requirement for this qualification would be SSC.



10.Detail of Competency Standards

CS 1: Operate equipment/machinery used in off season vegetable production

Overview: This competency standard covers the skills and knowledge required to identify different equipment/machinery used to perform various feild operation in off season vegetable production.

Competency Units	Performance Criteria
CU1. Perform tillage operation using different implements	<p>P1. Identify and arrange tools for required task</p> <p>P2. Perform operation of chisel plough according to SOP</p> <p>P3. Identify standard operation of disc plough</p> <p>P4. Perform process of bar harrow according to SOP</p> <p>P5. Identify standard process of Rotavator</p> <p>P6. Adhere to required safety standards</p>
CU2. Operate farm machinery	<p>P1. Identify standard working of tractor engine</p> <p>P2. Identify process involved in different power tools</p> <p>P3. Perform different operation using tractor (ploughing, planking, spraying etc.)</p> <p>P4. Ensure health and safety standards</p>
CU3. Identify and operate equipment used for IPM and nutrition management	<p>P1. Identify equipment used for integrated pest management</p> <p>P2. Identify equipment used for nutrition management</p> <p>P3. Operate insect pest management equipment according to defined method</p> <p>P4. Operate nutrition management equipment according to defined method</p> <p>P5. Ensure required health and safety standards</p>
CU4. Perform operations using land and media prepration implements	<p>P1. Identify implements involved in land preparation</p> <p>P2. Identify implements involved in media preparation</p> <p>P3. Perform standard operation through Laser Land Leveler</p> <p>P4. Operate Bed shaper/Ridger as per standard method</p> <p>P5. Perform standard operation through media preparatory equipment</p>



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	P6. Ensure health and safety standards
CU5. Operate management and maintenance tools	P1. Identify management and maintenance tools for off season vegetables P2. Operate management and maintenance tools as per standard method P3. Ensure health and safety standards
CU6. Identify process of harvesting tools	P1. Identify harvesting tools P2. Operate harvesting tools P3. Ensure health and safety standards
CU7. Maintain health and safety at workplace	P1. Operate management and maintenance tools as per standard method P2. Ensure health and safety standards

Knowledge & Understanding.

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out tasks covered in this competency standard. This includes the knowledge of

K1. Basic Agriculture Practices

K2. Understand operation of agriculture implements involved in off season vegetable production

K3. Basic SOPs for each implement mentioned in booklet or defined manual

K4. Health and safety principles involved in operations

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Understand basic function of implements
- Perform basic operations involved in off season vegetable production
- Adhere to safety standards involved in process

TOOLS AND EQUIPMENT

The tools and equipment required for this competency standard are given below:

S. No.	Items
1.	Laptops



2.	Projector
3.	Tractor
4.	Tillage implements
5.	Land preparation implements
6.	Power tools
7.	Sprayer
8.	Weeders
9.	Management and maintenance tools
10.	Harvesting tools
11.	First Aid kits
12.	PPEs

CS 2: Perform basic field operations for off season vegetable production

Overview: This competency standard covers the skills and knowledge required to understand and identify basic field operations in off season vegetable production using different tools and implements.

Competency Units	Performance Criteria
CU1. Perform ploughing	<ul style="list-style-type: none"> P1. Select implements for ploughing P2. Arrange/ fix implements for ploughing according to SOP P3. Ensure standard safety checks before and after use of machinery P4. Ensure pre and post-handling measures P5. Adhere to required safety standards
CU2. Perform Planking	<ul style="list-style-type: none"> P1. Identify and arrange tools for planking P2. Ensure standard safety checks before and after use of machinery P3. Fix implements for planking according to SOPs P4. Ensure cleanliness before and after use P5. Ensure safety standards involved in the process
CU3. Perform operation through Laser Land Leveler	<ul style="list-style-type: none"> P1. Calibrate implement as per standard method P2. Ensure safety checks before and after use of machinery P3. Fix laser land leveler unit according to standard method



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	P4. Operate laser land leveler according to standard method P5. Ensure health and safety standards
CU4. Perform management operations	P1. Perform weeding as per standard operation method P2. Perform spraying as per required method P3. Ensure health and safety standards

Knowledge & Understanding.

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out tasks covered in this competency standard. This includes the knowledge of

- K1.** Basic Agriculture operation procedures
- K2.** Understand operation of agriculture implements involved in off season vegetable production
- K3.** Standard operating procedures for required task
- K4.** Health and safety principles involved in operations

Critical Evidence(s) Required

The candidate needs to produce the following critical evidence(s) in order to be competent in this competency standard:

- Understand basic SOPs for each function
- Perform basic operations involved in off season vegetable production
- Follow safety standards involved in processes

TOOLS AND EQUIPMENT

The tools and equipment required for this competency standard are given below:

S. No.	Items
1.	Tractor
2.	Tillage implements
3.	Land preparation implements
4.	Power tools
5.	Sprayer
6.	Weeders
7.	Management and maintenance tools



8.	Harvesting tools
9.	First Aid kits
10.	PPEs

CS 3: Identify Produce Maturity

Overview: This competency standard covers the skill and knowledge required to identify produce maturity and maturity indices. The competency units consist of terminal performance objective and related technical knowledge necessary to carry out the task in a competent manner

Competency Units	Performance Criteria
CU1. Prepare materials to Identify produce maturity	<p>P1. Select appropriate time for identification of produced maturity as per recommendation</p> <p>P2. Identify and arrange requisite tools and equipment as per the job requirements</p> <p>P3. Prepare a plan for the required task</p> <p>P4. Select and use required Personal Protective Equipment (PPE) as per the recommendation</p>
CU2. Identify maturity indices	<p>P1. Identify the indices to determine the produce maturity as per the crop and recommended standards</p> <p>P2. Identify the appropriate stage of maturity and ripening to avoid possible disorders to the produce as per the set criteria</p> <p>P3. Identify proper harvesting time to increase the shelf life of the produce as per the crop requirement</p> <p>P4. Check physical parameters (size, shape, color, appearances, texture and lenticel number as per the requirements</p> <p>P5. Check chemical parameters (specific gravity, starch content, total soluble solids, sugar to acid ratio and oil content) as per standard</p> <p>P6. Identify organoleptic properties for maturity as per the recommendation</p>
CU3 Identify physiological maturity	<p>P1. Identify the appropriate stage for recording physiological maturity of each crop as per the recommendation</p> <p>P2. Identify the indices to determine the physiological maturity as per the crop and recommended standards.</p> <p>P3. Distinguish the physiological maturity of climacteric and non-climacteric fruits and vegetables as per the criteria</p> <p>P4. Maintain the data record as per the recommendation</p> <p>P5. Follow health and safety rules</p>



CU4 Identify Commercial maturity	<p>P1. Identify the appropriate time/stage for recording commercial maturity as per the crop and market recommended standards</p> <p>P2. Identify the indices to determine the commercial maturity as per the crop and market recommended standards</p> <p>P3. Distinguish the commercial maturity of climacteric and non-climacteric fruits and vegetables as per the criteria</p> <p>P4. Maintain records</p> <p>P5. Follow health and safety rules</p>
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Knowledge and Understanding

This competency standard will provide knowledge related to

- K1.** The harvest index, physiological maturity, commercial maturity
- K2.** Physical, chemical and organoleptic method of maturity
- K3.** Understand the different physiological stages of crop
- K4.** Standards applied for produce maturity and harvesting

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Need to know about the life cycle of the grown vegetables
- Need to know about the maturity and harvest indices, physiological maturity and commercial maturity
- Arrange tools for maturity indices
- Follow health and safety rules

TOOLS AND EQUIPMENT

The tools and equipment required for this competency standard are given below:

S. No.	Items
1.	Note book
2.	Pencil
3.	Gardening tool kit
4.	Refractometer
5.	Sampling and labelling tools
6.	PPEs
7.	First aid kit



CS 4: Perform Harvesting

Overview: This competency standard covers the skill and knowledge required to know pre-harvesting steps, perform harvesting of the mature crop and post harvesting activities. Each task consists of terminal performance objective and related technical knowledge necessary to carry out the task in a professional manner.

Competency Units	Performance Criteria
CU1. Prepare materials for harvesting	<p>P1. Select appropriate time for harvesting of produce at its maturity as per recommendation</p> <p>P2. Identify and arrange required tools and equipment as per the job requirements</p> <p>P3. Prepare a plan for required task as per the job requirement</p> <p>P4. Select and use required Personal Protective Equipment (PPE) as per the recommendation</p>
CU2. Record harvest index	<p>P1. Identify the appropriate time/stage for recording harvest index</p> <p>P2. Identify the indices to determine the harvest index as per the crop and market recommended standards</p> <p>P3. Maintain the records</p> <p>P4. Follow health and safety rules</p>
CU3. Perform pre-harvesting steps	<p>P1. Identify the pre-harvesting factors (environmental, cultural practices and physiological components) affecting post-harvest quality as per market requirement</p> <p>P2. Prepare for harvesting work as per standard requirements</p> <p>P3. Shift the required tools and equipment for harvesting to the site</p> <p>P4. Ensure harvesting machinery is working</p> <p>P5. Monitor the pesticide residue intervals (PRI) before the harvesting time as per the standards of F&V</p> <p>P6. Arrange required transport for shifting of harvested produce to the market</p>
CU4. Perform harvesting	<p>P1. Arrange the tools and equipment required for the harvesting</p> <p>P2. Harvest the desired economic part of the crop as per the established criteria</p> <p>P3. Manage the harvested produce to avoid post-harvest losses, as per the requirement</p> <p>P4. Transfer the harvested crop to the collection site as per the requirements</p>



	<p>P5. Clean the tools and equipment and shift to the store as per the SOPs.</p> <p>P6. Ensure health and safety standards throughout the harvesting process</p> <p>P7. Dispose undesired, diseased plants and weeds from the tunnels/fields after harvesting as per the recommendation</p> <p>P8. Clean and store the tools after use as per the recommendation</p>
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Knowledge and Understanding

This competency standard will provide knowledge related to

- K1.** Material required for harvesting, harvest index, physiological maturity, commercial maturity
- K2.** Harvesting techniques
- K3.** Activities of farm to market supply of the harvested produce
- K4.** Health and safety protocols involved

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Need to know about the maturity and harvest indices, physiological maturity and commercial maturity
- Arrange tools for maturity indices, physiological maturity, commercial maturity and harvesting operation
- Understand activities of farm to market supply of the harvested produce
- Follow health and safety rules

TOOLS AND EQUIPMENT

The tools and equipment required for this competency standard are given below:

S. No.	Items
1.	Note book and Pencil
2.	Gardening tool kit
3.	Harvesting tools and employments
4.	PPEs
5.	First aid kit



CS 5: Perform Sorting and Grading

Overview: This competency standard covers the skill and knowledge required to perform sorting and grading activities. Each task consists of terminal performance objective and related technical knowledge necessary to carry out the task in a professional manner.

Competency Units	Performance Criteria
CU1. Prepare materials for sorting and grading	P1. Identify the ideal time and place for sorting and grading as per job requirements P2. Identify and arrange required tools and equipment as per requirements P3. Prepare a plan for required tasks P4. Select and use the Personal Protective Equipment (PPE) as per the job requirements.
CU2. Perform sorting at field	P1. Arrange the tools used in the sorting process as per the requirement. P2. Follow the process of manual produce sorting as per the requirement at farm P3. Sort out the produce according to required parameters (diameter, length and shape) P4. Dispose-off the undesirable/sorted out produce as per the SOP P5. Clean and store the tools and equipment as per the recommendation P6. Ensure health and safety standards
CU3. Perform Grading activities	P1. Identify and arrange the tools and equipment required for grading P2. Perform grading of the produce manually on the basis of physical characteristics (size, color and shape) as per established criteria P3. Perform mechanical grading of required produce according to the set criteria P4. Clean the tools and equipment used after grading as per the SOPs P5. Ensure health and safety standards

Knowledge & Understanding

This competency standard will provide knowledge related to

- K1.** Sorting and grading techniques
- K2.** The grading based on factors (consistency, absence of defects, character, uniformity, flavor and odor), as specified in the grading standards criteria.
- K3.** Understand the descriptive terminologies of grading as per the SOPs
- K4.** Disposal of unwanted produce
- K5.** Supply of the harvested produce from farm to market

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Arrange tools for sorting and grading purpose and harvesting operation
- Supervise the activities of farm to market supply of the harvested produce



- Follow health and safety rules

TOOLS AND EQUIPMENT

The tools and equipment required for this competency standard are given below:

S. No.	Items
1.	Notebook
2.	Pencil
3.	Gardening tool kit
4.	Sorting tools
5.	Grading tools and equipment
6.	PPEs
7.	First aid kit

CS 6: Maintain Clean and efficient workplace

Overview: This competency standard will provide skills and knowledge related to standard technical lab safety rules. The trainee will be equipped with standard rules for working in off-season vegetable production.

Competency Units	Performance Criteria
CU.1 Ensure House -keeping Rules	<p>P1. Ensure cleanliness of the workplace as per requirement.</p> <p>P2. Ensure accessibility of all emergency points as per safety rules.</p> <p>P3. Assort necessary materials according to need at the workstation.</p> <p>P4. Store lightweight items on top and heavy items at the base of cabinets</p> <p>P5. Maintain aeration of equipment to prevent overheating.</p> <p>P6. Maintain environmental conditions as per given standards</p>
CU.2 Follow dress code safety Rules	<p>P1. Wear hair covering cap if required.</p> <p>P2. Ensure the safety of loose clothing or jewelry first.</p> <p>P3. Use completely covering footwear.</p> <p>P4. Wear Full coverage Clothes.</p>
CU.3 Adhere to Chemical Safety Rules	<p>P1. Treat all Chemicals as per Material Safety Data Sheet (MSDS).</p> <p>P2. Use chemical resistant gloves while handling chemicals.</p> <p>P3. Label chemicals as per safety standards.</p> <p>P4. Ensure disposal of chemicals as per set safety rules.</p> <p>P5. Ensure proper selection of chemicals for your work.</p> <p>P6. Clean spillage according to protocols.</p>



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	P7. Ensure storage of chemicals according to compatibility list
CU.4 Ensure personal hygiene and Sanitation at workplace	P1. Ensure personal hygiene with clean clothing, gloves, face masks, goggles, etc. P2. Refrain from eating, smoking & drinking openly. P3. Ensure Cleanliness of workplace P4. Undertake fumigation as per given standards P5. Ensure disposal of waste as per standard safety rules P6. Wash hand properly before and after each task as per safety standard P7. Place all equipment at designated sites after use P8. Maintain workplace environment in accordance with set standards.

Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out tasks covered in this competency standard. This includes the knowledge of:

- K1:** Identify the commonly used tools and equipment used at workplace.
- K2:** Rights and responsibilities of employers and employees
- K3:** Consultative processes to manage and monitor health and safety issues to enable active participation in maintaining a safe workplace
- K4:** State potential hazards in the workplace
- K5:** State commonly used hazard signs and safety symbols

Critical Evidence(s) Required

The candidate needs to produce the following critical evidence(s) to be competent in this competency standard:

Identify health and safety policies to maintain and avoid any unwanted incident.

CS 7: Adopt Safety Regulations, Labor Protection Laws, Environmental Protection Laws at Workplace

Overview:

After this Competency Standard, the Trainee will be able to develop skill and competence required to maintain Occupational Safety, Health and Environment at the workplace according to the National and International Protection Agencies Standards and take remedial measures for Personal, Occupational and Environmental Protection. The Trainee will be able to deal with the emergencies in



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a professional manner, thus minimizing the losses and providing a safe and healthy working environment.

Competency Units	Performance Criteria
<p>CU1. Implement International Safety Standards in your work environment</p>	<p>P1. Recognize Electrical Safety hazards as per International Electro-Technical Commission (IEC) Standards P2. Determine Environmental Pollution risk factors as per Protection Agency (EPA) standards P3. Identify Electrical Safety Hazards as per Institute of Electrical and Electronics Engineers (IEE) standards P4. Categorize the Electrical Safety Hazards as per Electrical Safety Foundation International (ESFI) standards P5. Identify Labor Protection Laws as per International Labor Organization (ILO) rules P6. Identify the steps to minimize the Electrical hazards and Environmental Pollution. P7. Prepare a report for all the above activities.</p>
<p>CU2. Implement National Safety Standards in your work environment</p>	<p>P1. Identify Factory associated hazard as per Chapter 3 of Factories Act, 1934 P2. Determine Environmental Pollution factors as per Pakistan Environmental Protection Act, 1997 P3. Recognize the Labor protection laws as per Labor Protection Policy 2006 P4. Identify the workplace hazards as per Occupational health and safety (OHS) standards P5. Identify the steps to minimize the Electrical hazards, Environmental Pollution and Labor Safety P6. Prepare a report for all the above activity.</p>
<p>CU3. Implement International and National Labor Protection Laws</p>	<p>P1. Identify Labor Protection Laws as per International Labor Organization (ILO) rules P2. Recognize the Labor protection laws as per Labor Protection Policy 2006 P3. Identify the Bonded Labor and Child Labor policy. P4. Determine the leaves policy and compensation policy for the Labor. P5. Recognize the minimum wage for the Labor P6. Identify the remedial steps for the protection and prosperity of Labor. P7. Prepare a report for all the above activity.</p>



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<p>CU4. Implement National and International Environmental protection laws</p>	<p>P1. Determine Environmental Pollution risk factors as per Protection Agency (EPA) standards</p> <p>P2. Identify the steps to minimize the Electrical hazards and Environmental Pollution.</p> <p>P3. Determine Environmental Pollution factors as per Pakistan Environmental Protection Act, 1997</p> <p>P4. Identify the requirements for Initial Environmental Examination (IEE)</p> <p>P5. Identify the requirements for Environmental Impact Assessment (EIA)</p> <p>P6. Prepare a report for all the above activity.</p>
<p>CU5. Prepare for emergencies</p>	<p>P1. Take emergency response training</p> <p>P2. Ensure practice of emergency exercises</p> <p>P3. Ensure the availability of first aid box and fire extinguisher</p> <p>P4. Check the expiry of medicines and fire extinguishers</p> <p>P5. Check the emergency alarms</p> <p>P6. Ensure regular practice of gathering the workers in assembly area during the emergency.</p>
<p>CU6. Respond to emergencies</p>	<p>P1. Follow the emergency plan</p> <p>P2. Communicate instructions to co workers</p> <p>P3. Assess risk and determine the course of action</p> <p>P4. Operate emergency equipment and supplies</p> <p>P5. Ensure that the ambulance and fire brigade is at stand by (for major emergency)</p>
<p>CU7. Adopt company policies and procedures</p>	<p>P1. Ensure company’s safety policy</p> <p>P2. Adopt company safety procedure</p> <p>P3. Advocate worker with company safety policy</p> <p>P4. Implement Safety sign board as per standard</p>

Knowledge & Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out tasks covered in this competency standard. This includes the knowledge of

- K1:** Company policies and procedures
- K2:** Emergency equipment, supplies and their operation
- K3:** Factories Act 1934



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- K4:** Factors affecting Health & Safety in the workplace.
- K5:** First-Aid-Box.
- K6:** Hazardous chemical control procedures
- K7:** IEC/EPA/IEE/ESFI Standards
- K8:** Labor Protection Policy 2006
- K9:** Methods of communication during emergency
- K10:** Methods of first aid cardio respiratory Procedure
- K11:** Methods of treatment against electric shock
- K12:** Methods of treatment against minor injuries
- K13:** Occupational health and safety (OHS) standards
- K14:** Pakistan Environmental Protection Act, 1997
- K15:** Personal Protective Equipment (PPE)
- K16:** Response various types of emergencies
- K17:** Safety measures
- K18:** Types of emergencies
- K19:** Types of work site Hazards
- K20:** Understand various safe guards
- K21:** Uses of Fire Extinguisher
- K22:** Work permit/no objection certificate(NOC)

TOOLS AND EQUIPMENT

The tools and equipment required for this competency standard are given below:

S. No.	Items
1.	Emergency Alarm/Bell
2.	Protection suite
3.	Emergency response Plan
4.	Fall Protection Plan
5.	Fire Buckets
6.	Fire Extinguisher
7.	First Aid Box
8.	Hearing protection
9.	International Safety Standards Manual
10.	National Safety Standards Manual
11.	Respiratory mask
12.	Safety goggles



13.	Safety shoes
14.	Stretcher
15.	WHMIS Handbook

Critical Evidence(s) Required

The candidate needs to produce the following critical evidence(s) in order to be competent in this competency standard:

Handle and set Lightning for Current affair program:

- Types of hazards that are most likely to cause harm to health and safety
- Health and safety precautions
- Health and safety signs and symbols
- Techniques and methods to identify the risks of hazards at the workplace
- Dealing with hazards to avoid any accident or injury
- Safety reporting procedures and documentation
- . firefighting methods
- Demonstrate use of appropriate Personal Protective Equipment (PPE)

CS 8: Perform Personal Health and Safety Guidelines

Overview: This Competency Standard identifies the competencies required to protect/apply occupational Safety, health and Environment at workplace according to the industry's approved guidelines, procedures and interpret environmental rules/regulations. Trainee will be expected to identify and use Personal Protective Equipment (PPE) according to the work place requirements. The underpinning knowledge regarding Observe Occupational Safety and Health (OSH) will be sufficient to provide the basis for the job at workplace.

Competency Units	Performance Criteria
CU1. Identify Personal Hazards at Workplace	P1. Identify risk to personal health P2. Identify hygiene and safety at work place P3. Identify processes P4. Identify tools, equipment and consumable materials that have the potential to cause harm P5. Report, identified risk to Health, hygiene and safety to concerned
CU2. Apply Personal Protective and Safety Equipment (PPE)	P1: List the Personal Protective equipment P2: Select personal protective equipment in terms of type and quantity according to work orders. P3: Wear personal protective equipment according to job



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	<p>requirements.</p> <p>P4: Clean personal protective equipment</p> <p>P5: Store Personal Protective equipment in proper place after use.</p>
<p>CU3. Comply Occupational Safety and Health (OSH)</p>	<p>P1. Maintain cleanliness and hygiene as per organizational policy</p> <p>P2. Comply with Health, hygiene and safety precautions before starting work</p> <p>P3. Comply organizational Health, hygiene and safety guidelines during work</p> <p>P4. Deal with resolvable problems according to prescribed procedures</p> <p>P5. Report un resolvable problems to concerned</p> <p>P6. Place the tools equipment etc. at their prescribed place after completion of work</p>
<p>CU4. Dispose of hazardous Waste/materials from the designated area.</p>	<p>P1: Identify hazardous waste materials which needs to be disposed off</p> <p>P2: Segregate hazardous or non-hazardous waste carefully from the designated area as per approved procedure</p> <p>P3: Use proper disposal hazardous containers for dispose-off hazardous waste as per procedure</p> <p>P4: Take necessary precautions like putting masks and gloves while disposing hazardous waste/ materials as per standard operating procedure</p>

Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out tasks covered in this competency standard. This includes the knowledge of:

- K1:** Explain safety rules and regulations of organization
- K2:** List Personal protection and safety Equipment
- K3:** Describe meaning of Safety signs and symbols
- K4:** Demonstrate understanding of safety related Standard Operating Procedure/guidelines
- K5:** Describe waste disposal SOPs
- K6:** Explain best practices relating to clean and safe work environment

Critical Evidence(s) Required

The candidate needs to produce following critical evidence (s) to be competent in this competency standard:

A person who demonstrates competency in this unit must be able to provide evidence of maintaining personal health and hygiene practices. The evidence should integrate employability skills with



workplace tasks and job roles and verify competency is able to be transferred to other circumstances and environments.

CS 9: Apply Work Health and Safety Practices (WHS)

Overview: This unit describes the skills to work with safety and participate in hazard assessment activities, follow emergency procedures and participate OHS practices in process.

Competency Units	Performance Criteria
CU1. Implement safe work practices at work place	<p>P1. Implement relevant rules and procedures of WHS at work place.</p> <p>P2. Comply with duty of care requirements</p> <p>P3. Use personal protective equipment according to safe work practices</p> <p>P4. Contribute to WHS consultative activities</p> <p>P5. Raise WHS issues with relevant personnel</p>
CU2. Participate in hazard assessment activities a work place	<p>P1. Identify hazards or WHS issues in the workplace to relevant personnel</p> <p>P2. Assess and control risks according to own level of responsibility, in line with workplace procedures</p> <p>P3. Report hazards or WHS issues in the workplace to relevant personnel</p> <p>P4. Document risk control actions as required</p>
CU3. Follow emergency procedures at workplace	<p>P1. Report emergencies or incidents promptly to relevant personnel</p> <p>P2. Deal with emergencies in line with own level of responsibility</p> <p>P3. Implement evacuation procedures as required</p>
CU4. Participate in OHS consultative processes	<p>P1. Contribute to workplace meetings, inspections or other consultative activities</p> <p>P2. Raise OHS (Occupational Health and Safety) issues with designated persons in accordance with organizational procedures</p> <p>P3. Take actions to eliminate workplace hazards or to reduce risks</p>



Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out tasks covered in this competency standard. This includes the knowledge of:

- K1:** Outline the WHS rights and responsibilities that apply to own role
- K2:** Explain the term duty of care
- K3:** Describe typical health and safety roles in the workplace
- K4:** List and describe common safety signs and symbols
- K5:** Explain procedures for reporting hazards, risks, incidents and accidents
- K6:** Identify and describe common hazards and major causes of accidents relevant to the workplace
- K7:** Explain what the term risk control means
- K8:** List and describe potential emergency situations and how to respond to them

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Demonstrate evidences of the Health and safety Processes to avoid any incident.

CS 10: Contribute to Work Related Health and Safety (WHS) Initiatives

Overview: This unit describes the skills and knowledge required to manage the identification, review, development, implementation and evaluation of effective participation and consultation processes as an integral part of managing work health and safety (WHS).

Competency Units	Performance Criteria
CU1. Contribute to initiate work-related health and safety measures	P1. compile database on work-related health and safety P2. Identify measures that address legal obligations. P3. Consult with individuals/ parties to formulate measures and initiatives P4. Consult with individuals/parties to identify factors impacting on work-related health and safety P5. Participate in consultative meetings.
CU2. Contribute to establish work-related health and safety measures	P1. Assist in planning of work-related health and safety measures P2. Contribute to the development of work-related health and safety measures P3. Identify to implement work-related health and safety measures i.e. <ul style="list-style-type: none">• resourcing requirements,



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	<ul style="list-style-type: none"> • timelines • responsibilities <p>P4. Assist to implement work-related health and safety measures and initiatives i.e.</p> <ul style="list-style-type: none"> • scheduling • liaison • administering resources • communication
<p>CU3. Contribute to ensure legal requirements of WHS measures</p>	<p>P1. Identify WHS legal requirements</p> <p>P2. Apply knowledge of all aspects of WHS measures to</p> <ul style="list-style-type: none"> • Consultation • workplace policies • participation processes <p>P3. Ensure, WHS measures are in accordance with legal requirements</p>
<p>CU4. Contribute to review WHS measures</p>	<p>P1. Develop effective practices to review work-related health and safety measures</p> <p>P2. Assist individuals and parties related to WHS measures in following activities</p> <ul style="list-style-type: none"> • preparing reports • communicating review • evaluating outcomes
<p>CU5. Evaluate the organization’s WHS system</p>	<p>P1. Assess ongoing compliance with OHS (Occupational Health and safety)</p> <p>P2. Take feedback from concerned persons regarding WHS measures.</p> <p>P3. Assess the overall effectiveness of WHS management practices</p> <p>P4. Assist the development process of WHS measures in following ways</p> <ul style="list-style-type: none"> • Suggest amendments • Document amendments • Implement amendments <p>P5. Take feedback from concerned persons regarding WHS measures.</p>



P6. Communicate improvements in WHS Measures

Knowledge and Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out tasks covered in this competency standard. This includes the knowledge of:

- K1.** Explain the application of relevant mandatory health monitoring, including biological monitoring, to help secure work health and safety
- K2.** Explain the difference between work-related health and safety measures and initiatives designed to meet specific legislative requirements and obligations, and those designed to support non-statutory health promotion programs, and give examples of each
- K3.** List factors that impact on work-related health and safety and their potential effects
- K4.** Identify internal and external sources of WHS information and data, and how to access them
- K5.** Outline organizational WHS and other relevant policies, procedures, processes and systems, including human resources
- K6.** Summarize relevant WHS legislation, other legislation (such as privacy and workers compensation) and common law rights and duties specific to work-related health and safety measures and initiatives
- K7.** Describe work-related health and safety measures and initiatives that either address specific legislative requirements and obligations, or support non-statutory health prevention programs, including:
 - The factors impacting on worker health and safety that they address
 - Effectiveness
 - Costs and benefits
 - Criteria for decisions regarding their implementation in a specific workplace
 - How they should be implemented.

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) to be competent in this competency standard:

A person who demonstrates competency in this unit must be able to provide evidence of the ability to contribute work-related health and safety measures and initiatives. The evidence should integrate employability skills with workplace tasks and job roles and verify competency is able to be transferred to other circumstances and environments.