



**National Competency Standards Level-3**  
**For**  
**“Tunnel Farming, Green House & Agribusiness”**  
**(Off-season Vegetable production & Agribusiness)**





## **ACKNOWLEDGEMENT**

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

Nobody has been more important in the pursuit of this project than Dr. Faheem Khan, Executive Director, NAVTTTC, whose patronage and support remained there throughout the development process. Special thanks to Syed Javed Hassan Chairman NAVTTTC who made it happened in this challenging time.



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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).



## **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



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### 3. Levelling of Core Competencies of the Qualification

Code	Competency Standard	Category	Level	Credit
CS11	Prepare for Nursery Raising and site selection	Technical	3	3
CS12	Perform Seed Sowing (Conventional)	Technical	3	4
CS13	Perform Seed Sowing (Modern technique)	Technical	3	4
CS14	Perform Nursery Management practices.	Technical	3	3
CS15	Transport Nursery seedlings	Technical	3	2
CS16	Perform Nursery Marketing	Technical	3	3
CS17	Select and procure material required for Greenhouse	Technical	3	4
CS18	Install Greenhouse structures	Technical	3	8
CS19	Maintain Greenhouse structure	Technical	3	2
CS20	Operate Greenhouse components	Technical	3	3
CS21	Perform Greenhouse Operations	Technical	3	2
CS22	Perform IPM and IDM	Technical	3	7
CS23	Apply Basic Computer skills to create a variety of Documents	Generic	3	2
CS24	Operate digital media technology	Generic	3	2
CS25	Create user documentation	Generic	3	2
CS26	Create technical documentation	Generic	3	2
CS27	Use social media tools for collaboration and engagement	Generic	3	2
CS28	E-Commerce – SEO (Search Engine Optimization)	Generic	3	2
CS29	E-Commerce – SCM (Supply Chain Management)	Generic	3	2
CS30	E-Commerce – Social Media Marketing	Generic	3	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:

ISCED Classification for Tunnel Farming, Greenhouse & Agribusiness Level 3	
Code	Description
Greenhouse Operator(Level 3)	
CS11	Prepare for Nursery Raising and site selection
CS12	Perform Seed Sowing (Conventional)
CS13	Perform Seed Sowing (Modern technique)
CS14	Perform Nursery Management practices.
CS15	Transport Nursery seedlings
CS16	Perform Nursery Marketing
CS17	Select and procure material required for Greenhouse
CS18	Install Greenhouse structures
CS19	Maintain Greenhouse structure
CS20	Operate Greenhouse components
CS21	Perform Greenhouse Operations
CS22	Perform IPM and IDM
CS23	Apply Basic Computer skills to create a variety of Documents
CS24	Operate digital media technology
CS25	Create user documentation
CS26	Create technical documentation
CS27	Use social media tools for collaboration and engagement
CS28	E-Commerce – SEO (Search Engine Optimization)
CS29	E-Commerce – SCM (Supply Chain Management)
CS30	E-Commerce – Social Media Marketing





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## 7. Members of Qualification Development Committee

The following members participated in the qualification development process on 23<sup>rd</sup> to 27<sup>th</sup> 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) NAVTTTC HQ



## 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) NAVTTTC HQ

## 9. Entry Requirements

The entry requirement for this qualification would be Level-2.



## 10.Detail of Competency Standards

### CS 11: Prepare for Nursery Raising and site Selection

**Overview:** This competency standard covers the skills and knowledge required to enable the student to be able to select suitable site and choose suitable seeds for nursery sowing by following safety measures.

Competency Units	Performance Criteria
<b>CU1.</b> Prepare work plan for Nursery raising	<b>P1.</b> Prepare plan of concerned task <b>P2.</b> Arrange Implements of required task <b>P3.</b> Ensure Safety measures and Hygienic conditions.
<b>CU2.</b> Select site for Nursery raising	<b>P1.</b> Perform site visit to check suitable portion of land. <b>P2.</b> Take permission from respective authority. <b>P3.</b> Cordon off the area as per standard procedure.
<b>CU3.</b> Select seeds for Nursery raising	<b>P1.</b> Collect and study Weather, soil, and water analysis Reports <b>P2.</b> Collect required Label information for selection as per your microclimate. <b>P3.</b> Collect Data for past performance on prescribed Performa. <b>P4.</b> Perform Economic Analysis according to selection criteria
<b>CU4.</b> Carry out seed viability test by following standard procedures.	<b>P1.</b> Perform seed sorting for the experiment. <b>P2.</b> Perform required germination test as per standard method <b>P3.</b> Maintain growth conditions for that seeds <b>P4.</b> Calculate the germination percentage <b>P5.</b> Calculate the required seed

### 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.** Types of different soils and their effect on seed germination
- K2.** Different types of seeds
- K3.** Measures to select a suitable site
- K4.** Steps to carry out a germination test



### Critical Evidence(s) Required

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

- Knowledge about seeds germination time
- Can be able to use basic agricultural Implements
- Consistence and patience about agriculture

### TOOLS AND EQUIPMENT

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

S. No.	Items
1.	Pencil
2.	Eraser
3.	Sharpner
4.	Calculator
5.	Measuring scale
6.	Drawing sheet
7.	Measuring Tape
8.	Compass
9.	Spade
10.	Germination chamber
11.	First Aid Kit

### CS 12: Perform Seed Sowing (Conventional)

**Overview:** This competency standard covers the skills and knowledge required for enabling the student to select site for nursery sowing to make beds as per standard method.

Competency Units	Performance Criteria
CU1. Prepare work for seed sowing	<b>P1.</b> Prepare plan of concerned task <b>P2.</b> Arrange Implements of required tasks. <b>P3.</b> Ensure Safety measures and Hygienic conditions.



<b>CU2.</b> Prepare Media for seed bed	<b>P1.</b> Identify and arrange mixing materials and its storage for further use <b>P2.</b> Calculate the quantity of materials according to requirement. <b>P3.</b> Preparation of media as per standard method and conditions <b>P4.</b> Ensure the required Safety measures
<b>CU3.</b> Prepare seedbeds.	<b>P1.</b> Prepare a layout plan for sowing <b>P2.</b> Implement layout plan <b>P4.</b> Perform tagging and fencing of area according to the requirement
<b>CU4.</b> Perform Seed Treatment	<b>P1.</b> Identify soil borne diseases of seed <b>P2.</b> Identify and arrange respective pesticides <b>P3.</b> Perform seed treatment process as per SOPs
<b>CU5.</b> Perform Seed Sowing	<b>P1.</b> Identify and arrange the required material for sowing <b>P2.</b> Perform sowing as per standard method <b>P3.</b> Perform top-dressing according to standard requirements <b>P4.</b> Ensure Hygiene at workplace according to set 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.** Seed bed shape and its directions
- K2.** Seed types and bed formation
- K3.** Cross staff with its types

### **Critical Evidence(s) Required**

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

- Knowledge about seed germinating time
- Knowledge about growing media mixing
- Can be able to use basic agricultural Implements
- Consistence and patience about agriculture.



## **TOOLS AND EQUIPMENT**

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

S. No.	Items
1.	Pencil
2.	Eraser
3.	Sharpner
4.	Calculator
5.	Measuring scale
6.	Drawing sheet
7.	Measuring Tape
8.	Compass
9.	Spade
10.	String

### **CS 13: Perform Seed Sowing (Modern technique)**

**Overview:** This competency standard covers the skills and knowledge required to perform seed sowing for offseason vegetable& fruit production at standard method

Competency Units	Performance Criteria
<b>CU1.</b> Prepare work plan for seed sowing	<b>P1.</b> Prepare plan for a concerned task <b>P2.</b> Arrange Implements of required tasks. <b>P3.</b> Ensure Safety measures and Hygienic conditions.
<b>CU2.</b> Prepare media for seed sowing	<b>P1.</b> Identify and arrange potting materials as per standard requirement. <b>P2.</b> Identify and arrange rooting media according to standard requirement <b>P3.</b> Prepare media according to standard requirement. <b>P4.</b> Perform media filling and compressing as per standard requirement <b>P5.</b> Ensure health and safety standards
<b>CU3.</b> Perform Seed Treatment	<b>P1.</b> Identify seed dormancy and soil borne diseases according to set standards <b>P2.</b> Perform seed priming according to standard methods



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	<b>P3.</b> Identify and arrange required pesticides for treatment of soil borne diseases <b>P4.</b> Perform seed treatment for soil borne diseases as per standard methods <b>P5.</b> Maintain hygiene conditions and maintain record
<b>CU4.</b> Perform Seed Sowing and Top Dressing	<b>P1.</b> Prepare and implement layout <b>P2.</b> Perform seed sowing as per standard methods <b>P3.</b> Perform top dressing according to set standards <b>P4.</b> Ensure placing in the germination chamber with favorable environmental conditions <b>P5.</b> Perform post management and care

**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.** Types of seed dormancy and its cures

**K2.** Seed types, soil born fungal diseases and required moisture to germinate

**K3.** Cheap and efficient materials readily available in the market for seed sowing

**Critical Evidence(s) Required**

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

- Prepare layout directions
- Seed depth as per standards
- Maintaining Temperature and humidity 24/7 during the germination.

**TOOLS AND EQUIPMENT**

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

S. No.	Items
1.	Pencil
2.	Eraser
3.	Sharpner
4.	Calculator
5.	Measuring scale
6.	Drawing sheet





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7.	Measuring Tape
8.	Compass
9.	White Chalk
10.	Tags
11.	Tray (78, 128, 200)
12.	Peat moss
13.	Vermiculite
14.	Coconut coir

### **CS 14: Perform Nursery Management Practices**

**Overview:** This competency standard covers the skills and knowledge required to germinate, raise, and protect from diseases, insects and abiotic factors leading towards the successful nursery raising

<b>Competency Units</b>	<b>Performance Criteria</b>
<b>CU1.</b> Prepare work for nursery management	<b>P1.</b> Prepare plan of concerned task <b>P2.</b> Arrange implements of required task <b>P3.</b> Ensure safety measures and hygienic conditions
<b>CU2.</b> Perform nursery management practices	<b>P1.</b> Perform data collection (Record Keeping) of relative humidity and temperature from Hygrometers <b>P2.</b> Take reading on daily basis <b>P4.</b> Ensure nutrient supply (as per schedule and symptoms) <b>P5.</b> Perform irrigation after intervals <b>P6.</b> Identify weeds and their eradication <b>P7.</b> Perform thinning of plants <b>P8.</b> Maintain suitable environment at nursery
<b>CU3.</b> Perform pest and diseases control	<b>P1.</b> Perform Identification of pests and diseases of nursery <b>P2.</b> Identify and arrange required pesticides <b>P3.</b> Perform required pesticide application according to SOPs <b>P4.</b> Perform post pesticide application care

### **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 knowledge of



**K1.**Knowledge of diseases

**K2.**Pest attack

**K3.**Biotic and abiotic stress factors

### Critical Evidence(s) Required

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

- Weed identification
- Knowledge about crop requirements and season

### TOOLS AND EQUIPMENT

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

S. No.	Items
1.	Pencil
2.	Eraser
3.	Sharpner
4.	Calculator
5.	Measuring scale
6.	Drawing sheet
7.	Measuring Tape
8.	Compass
9.	Scotch Tape
10.	Pesticides
11.	Spray mechine with different nozzles
12.	Watering cane
13.	Covering sheet

### CS 15: Transport Nursery Seedlings

**Overview:** This competency standard covers the skills and knowledge required to perform the task of nersery transportation that covers nursery hardening process, its packing to safe delivery to concerned field of transplantation.

Competency Units	Performance Criteria
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<b>CU1.</b> Prepare plan for nursery transportation	<b>P1</b> Prepare plan of concerned task <b>P2</b> Arrange Implements of required task <b>P3</b> Ensure safety measures and hygienic conditions
<b>CU2.</b> Perform conventional nursery transportation	<b>P1.</b> Perform order management as per customer's demand <b>P2.</b> Perform hardening method as per requirement <b>P3.</b> Perform required procedure before uprooting <b>P4.</b> Perform packaging, stacking, and covering of vehicle to protect from weather harshness
<b>CU3.</b> Perform modern nursery transportation	<b>P1.</b> Perform order management as per customer's demand <b>P2.</b> Perform hardening process as per set methods <b>P4.</b> Perform packaging, stacking, and covering of vehicle to protect from weather harshness

### **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.**Transportation types

**K2.**Transportation strategy

### **Critical Evidence(s) Required**

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

- Knowledge about physical maturity
- Knowledge about the rooting system of different vegetables
- Knowledge about wilting points and tenderness

### **TOOLS AND EQUIPMENT**

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

S. No.	Items
1.	Pencil
2.	Eraser



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3.	Sharpner
4.	Calculator
5.	Measuring scale
6.	Drawing sheet
7.	Measuring tape
8.	Compass
9.	White chalk
10.	Scotch tape
11.	Vehicles
12.	Cartons
13.	Jute Bags
14.	Jute Rope

### **CS 16: Perform Nursery Marketing**

**Overview:** This competency standard covers the skills and knowledge required to market the produce at commercial level, aiming to extend the business via both conventional and Digital Marketing system

<b>Competency Units</b>	<b>Performance Criteria</b>
<b>CU1</b> Prepare for Nursery transportation	<b>P1.</b> Arrange Implements for required task <b>P2.</b> Prepare plan for transportation <b>P3.</b> Ensure safety measures and hygienic conditions
<b>CU2</b> Conventional Marketing	<b>P1.</b> Perform identification of conventional marketing units <b>P2.</b> Perform advertisement strategy and follow-up <b>P3.</b> Calculate its potential via sale and expenses
<b>CU3</b> Digital Marketing	<b>P1.</b> Identify digital marketing sources <b>P2.</b> Advertisement on digital media as per standards and perform follow-up <b>P3.</b> Calculate its potential

### **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.** Nearby markets and its requirements



## K2.Customer requirements

### Critical Evidence(s) Required

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

- English language understating
- Knowledge about computer usage

### TOOLS AND EQUIPMENT

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

S. No.	Items
1.	Pencil
2.	Eraser
3.	Sharpner
4.	Calculator
5.	Computer unit &internet

### CS 17: Select and procure material required for Greenhouse

**Overview:** This competency standard covers the skills and knowledge required to select suitable material to build different types of Greenhouse and to procure the suitable materials.

Competency Units	Performance Criteria
<b>CU1.</b> Select foundation material	<b>P1.</b> Collect data of climate and site conditions <b>P2.</b> Select durable and corrosion resistant material <b>P3.</b> Select suitable material as per standards
<b>CU2.</b> Select greenhouse structure material	<b>P1.</b> Select support bars/stacking for climbing plants <b>P2.</b> Select suitable material to walk underneath <b>P3.</b> Select structure for side vents as per standards <b>P4.</b> Select covering materials (glass, flexible plastic films, rigid plastic sheet )as per requirement <b>P5.</b> Select required materials(wood or metal) for frame
<b>CU3.</b> Conduct market survey for procurement of	<b>P1.</b> Plan market survey according to prescribed standard



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material	<b>P2.</b> Collect data of material required for greenhouse structure on prescribed format <b>P3.</b> Ensure health and safety standards
<b>CU4.</b> Perform procurement	<b>P1.</b> Select greenhouse structure material as per job requirement <b>P2.</b> Procure the greenhouse structure material as per standards <b>P3.</b> Manage the labour to load and unload materials <b>P4.</b> Ensure health and safety standards
<b>CU5.</b> Quality assurance	<b>P1.</b> Ensure the quality of materials <b>P2.</b> Ensure the durability, weight, light transmission and breakage of covering materials <b>P3.</b> Ensure quality of pipes or foundation material

**Knowledge & Understanding.**

The candidate must be able to demonstrate underpinning knowledge and understanding required to select material for construction of greenhouse. This includes the knowledge of

- K1.** Different materials required for construction of greenhouse, their specifications and uses.
- K2.** Learn about different materials used for installation of irrigation and ventilation systems.
- K3.** Learn about different types of greenhouse
- K4.** Understand about labor hiring and work allocation
- K5.** Understand requirements of different crops
- K6.** Understand weather and climate conditions of an area

**Critical Evidence(s) Required**

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

- Knowledge of different materials required for construction of greenhouse.
- Capable to identify and select required material
- Decision about suitability of different greenhouse for specific crops and area

**TOOLS AND EQUIPMENT**



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

S. No.	Items
1.	Drawing sheet
2.	Pencil
3.	Rubber
4.	Sharpner
5.	Muasuring tape
6.	Foundation bars
7.	Support bars
8.	Ventilation Fans
9.	Door accessories
10.	Iron bars of different quality
11.	

### CS 18: Install Greenhouse Structures

**Overview:** This competency standard covers the skills and knowledge required to install different materials to construct a greenhouse.

Competency Units	Performance Criteria
<b>CU1.</b> Select greenhouse structure	<b>P1.</b> Identify and arrange the tools as per job requirement <b>P2.</b> Collect data about desired crop/s <b>P3.</b> Collect data about climate of the area <b>P4.</b> Collect geographical data of the selected site <b>P5.</b> Select the most suitable type of greenhouse based on the collected data <b>P6.</b> Maintain record <b>P7.</b> Ensure health and safety standards
<b>CU2.</b> Prepare for installation of greenhouse	<b>P1.</b> Ensure safety equipment as per standard SOPs <b>P2.</b> Identify and arrange required tools for installation <b>P3.</b> Prepare installation site as per standard requirements <b>P5.</b> Ensure performance check of required instruments <b>P6.</b> Prepare layout for required greenhouse as per standard criteria





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<b>CU3.</b> Perform Installation of Lean-to type	<b>P1.</b> Ensure availability of required installation tools and materials <b>P2.</b> Implement layout plan as per design <b>P3.</b> Perform installation of lean-to structure <b>P4.</b> Perform post installation practices as per standards <b>P6.</b> Ensure health and safety standards
<b>CU4.</b> Perform Installation of Even Span type	<b>P1.</b> Ensure availability of required installation tools and materials <b>P2.</b> Implement layout plan as per design <b>P3.</b> Perform installation of even span structure <b>P4.</b> Perform post installation practices as per standards <b>P5.</b> Ensure health and safety standards
<b>CU5.</b> Perform Installation Ridge and Furrow type	<b>P1.</b> Ensure availability of required installation tools and materials <b>P2.</b> Implement layout plan as per design <b>P3.</b> Perform installation of ridge and furrow <b>P4.</b> Perform post installation practices as per standards <b>P5.</b> Ensure health and safety standards
<b>CU6.</b> Perform Installation Gothic arch type	<b>P1.</b> Ensure availability of required installation tools and materials <b>P2.</b> Implement layout plan as per design <b>P3.</b> Perform installation of Gothic arch <b>P4.</b> Perform post installation practices as per standards <b>P5.</b> Ensure health and safety standards
<b>CU7.</b> Perform Installation of Quonset type	<b>P1.</b> Ensure availability of required installation tools and materials <b>P2.</b> Implement layout plan as per design <b>P3.</b> Perform installation of Quonset <b>P4.</b> Perform post installation practices as per standards <b>P5.</b> Ensure health and safety standards
<b>CU8.</b> Perform Installation of Cold frame type	<b>P1.</b> Ensure availability of required installation tools and materials <b>P2.</b> Implement layout plan as per design <b>P3.</b> Perform installation of Cold frame <b>P4.</b> Perform post installation practices as per standards <b>P5.</b> Ensure health and safety standards



### **Knowledge & Understanding.**

The candidate must be able to demonstrate construction of different structures of poly-tunnel. This includes the knowledge of

- K1.** Safety measures required to start work.
- K2.** General requirements of greenhouse construction.
- K3.** Development of working environment such as availability of electric power, water for irrigation and cleaning of work place.
- K4.** Availability of sunlight, proper aeration and proper direction of greenhouse
- K5.** Standard procedures for installation of greenhouse according to provided design.

### **Critical Evidence(s) Required**

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

- Proper planning of greenhouse construction
- Preparation of work place
- Follow safety instruction required to operate tools
- Assemble the structure according to the planned design

### **TOOLS AND EQUIPMENT**

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

S. No.	Items
1.	Tools
2.	Foundation bars
3.	Structure bars
4.	Different parts of poly-tunnel
5.	Iron materials
6.	Marker
7.	Measuring scale
8.	Measuring tape

### **CS 19: Maintain Greenhouse Structure**

**Overview:** This competency standard covers the skills and knowledge required to effectively maintain the greenhouse.

Competency Units	Performance Criteria
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<b>CU1.</b> Monitor the greenhouse	<b>P1.</b> Perform periodic surveys of the greenhouse <b>P2.</b> Identify structural damage <b>P3.</b> Report the structural damage as per standard format <b>P4.</b> Ensure health and safety standards
<b>CU2.</b> Maintain greenhouse structure	<b>P1.</b> Arrange required material and tools for repairing <b>P2.</b> Repair the required damage of greenhouse structures <b>P3.</b> Maintain records <b>P6.</b> Ensure health and safety standards

### **Knowledge & Understanding.**

The candidate must be able to demonstrate the factors for damaging poly-tunnel. This includes the knowledge of

**K1.** Factors for greenhouse damage

**K2.** Management practices regarding damage in greenhouse

### **Critical Evidence(s) Required**

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

- Conduct greenhouse survey to identify damages
- Arrange material required for maintenance

### **TOOLS AND EQUIPMENT**

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

S. No.	Items
1.	Ladder
2.	Notebook
3.	Pencil
4.	Marker
5.	Eraser
6.	Sharpner
7.	Measuring tape
8.	Iron Rod



### CS 20: Operate greenhouse components

**Overview:** This competency standard covers the skills and knowledge required to understand the working of different components of Greenhouse for appropriate maintainance of required environment.

Competency Units	Performance Criteria
<b>CU1.</b> Understand working of various Greenhouse Components	<b>P1</b> Identify different types of Greenhouse. <b>P2</b> Identify suitability as per crop requirement. <b>P3</b> Identify and arrange power source to fulfil energy requirements.
<b>CU2.</b> Operate environmental controlling components	<b>P1</b> Perform understanding of different equipment used for controlling micro climate. <b>P2</b> perform measures to control Humidity in Greenhouse <b>P3</b> Perform measures to control Temperature in the Greenhouse. <b>P4</b> Ensure Hygienic conditions at the work place.
<b>CU3.</b> Operate Processing Component	<b>P1</b> Perform identification of processing components of Greenhouse <b>P2</b> Perform operation of processing of components of Greenhouses. <b>P3</b> Ensure PPEs and maintain hygienic conditions at workplace.
<b>CU4.</b> Operate irrigation systems.	<b>P1</b> Perform Identification irrigation systems as per conditions <b>P2</b> Perform operation of irrigation types as per standard. <b>P3</b> Ensure PPEs and maintain hygienic conditions at workplace.



### **Knowledge and Understanding.**

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

**K1:** Explain Greenhouse components including Frame work, covering sheets, Cool pad system and Drip Irrigation System

**K2:** Explain the standard procedures to operate the Greenhouse

**K3:** Explain Ideal environment required for crop growth

### **Critical Evidence(s) Required**

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

- Monitor and maintain the conditions of tools and equipment
- maintaining and running the Greenhouse
- Monitor the environment inside Greenhouse

### **TOOLS AND EQUIPMENT**

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

S. No.	Items
1.	Fans,
2.	Exhaust,
3.	Pads,
4.	Humidifier/fogger,
5.	Heater,
6.	Frame work,
7.	Plythene sheets,
8.	Motors
9.	Water reservoir
10.	Pumps
11.	Fertilizer Mixer
12.	Pipes including the main and laterals
13.	Drips
14.	Shading nets
15.	Glass sheet



## CS 21: Perform greenhouse Operations

**Overview:** This competency standard covers the skills and knowledge required to understand the working of different components of Greenhouse for appropriate maintenance of required environment.

Competency Units	Performance Criteria
<b>CU1.</b> Collect planting material	<b>P1</b> Identify the planting material as per requirement and maintain its record. <b>P2</b> Ensure collection of concerned plant material on time. <b>P3</b> Perform labelling as per required format. <b>P4</b> Ensure personnel hygiene and work place sanitation according to required set standard.
<b>CU2.</b> Prepare media for plantation	<b>P1</b> Perform identification of different types of media <b>P2</b> Ensure suitable selection of growing media as per requirement. <b>P3</b> Perform labelling as per required format. <b>P4</b> Ensure personnel hygiene and work place sanitation according to required set standard
<b>CU3.</b> Perform management operations.	<b>P1</b> Identification of management operations as per requirement <b>P2</b> Implementation of management practices as per standards <b>P3</b> Ensure personnel hygiene and work place sanitation according to required set standard
<b>CU4.</b> Maintain Records.	<b>P1</b> Prepare stock control system of equipment as per requirements <b>P2</b> Identify ordering system and process as per standard <b>P3</b> Ensure stock level as per requirement <b>P4</b> Ensure safe placement of records

### Knowledge and Understanding.

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

**K1:** Explain Greenhouse components including Frame work, covering sheets, Cool pad



system and Drip Irrigation System

**K2:** Explain the standard procedures to operate the Greenhouse

**K3:** Explain Ideal environment required for crop growth.

### **Critical Evidence(s) Required**

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

- Monitor and maintain the conditions of tools and equipment
- maintaining and running the Greenhouse
- Monitor the environment inside Greenhouse

### **TOOLS AND EQUIPMENT**

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

S. No.	Items
16.	Fans,
17.	Exhaust,
18.	Pads,
19.	Humidifier/fogger,
20.	Heater,
21.	Frame work,
22.	Plythene sheets,
23.	Motors
24.	Water reservoir
25.	Pumps
26.	Fertilizer Mixer
27.	Pipes including the main and laterals
28.	Drips
29.	Shading nets
30.	Glass sheet





## CS 22: Perform IPM and IDM

**Overview:** This competency standard covers the skills and knowledge required to understand the working of different components of Greenhouse for appropriate maintenance of required environment.

Competency Units	Performance Criteria
<b>CU1.</b> Identify pest invasion	<p><b>P1.</b> Identify plant pest and disorders according to prescribed IPM standards.</p> <p><b>P2.</b> Identify the beneficial organisms according to insect orders.</p> <p><b>P3.</b> Assess Scope and size of the damage according to economic threshold level (ETL)</p> <p><b>P4.</b> Follow health and safety standards required</p>
<b>CU2.</b> Schedule the Implementation of control strategies by IPM	<p><b>P1.</b> Select required control activities according to damage.</p> <p><b>P2.</b> Identify and arrange tools, equipment's, machinery, and biological cards for required activity.</p> <p><b>P3.</b> Ensure Risks and hazards management according to safety standards.</p> <p><b>P4.</b> Ensure Personal Protective Equipment (PPE) according to required operations.</p> <p><b>P5.</b> Ensure Eco-friendly procedures according to standards.</p>
<b>CU3.</b> Perform Biological control	<p><b>P1.</b> Perform identification for effectiveness of biological control agents.</p> <p><b>P2.</b> Perform application of biological control agents as per recommendations.</p> <p><b>P3.</b> Periodic inspection for its effectiveness.</p> <p><b>P4.</b> Make visits and evaluate results.</p> <p><b>P5.</b> Ensure health and safety standards</p>
<b>CU4.</b> Perform Physical control	<p><b>P1.</b> Perform identification for effectiveness of Physical control agents.</p> <p><b>P2.</b> Perform application of Physical control agents as per recommendations.</p> <p><b>P3.</b> Periodic inspection for its effectiveness.</p> <p><b>P4.</b> Make visits and evaluate results.</p>



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	<b>P5.</b> Follow health and safety standards
<b>CU5.</b> Perform Cultural control	<b>P1.</b> Perform identification for effectiveness of Physical control agents. <b>P2.</b> Perform identification and arrange Cultural control tools <b>P3.</b> Perform Physical control agents as per recommendations. <b>P4.</b> Periodic inspection for its effectiveness. <b>P5.</b> Make visits and evaluate results. <b>P6.</b> Ensure PPEs.
<b>CU6.</b> Perform Chemical control	<b>P1.</b> Perform identification for effectiveness of Chemical control agents. <b>P2.</b> Perform identification and arrange chemicals (pesticides) <b>P3.</b> Perform application of Chemical (pesticides) as per recommendations. <b>P4.</b> Periodic inspection for its effectiveness. <b>P5.</b> Make visits and evaluate results. <b>P6.</b> Ensure PPEs.
<b>CU7.</b> Perform pest control measures	<b>P1.</b> Identify and arrange required tools and chemicals required to perform IPM activity <b>P2.</b> Implement IPM standards. <b>P3.</b> Maintain work place after completion of each activity. <b>P4.</b> Prepare performance report according to format. <b>P5.</b> Maintain record according to legislative guidelines.
<b>CU8.</b> Inspect Control measures	<b>P1.</b> Check side effects of control measures on plants and external environment. <b>P2.</b> Measure efficiency of applied control activity with reference to standard protocols. <b>P3.</b> Regulate IPM control methods to meet organizational requisites.

**Knowledge and Understanding.**

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

**K1.** Explain Greenhouse components including Frame work, covering sheets, Cool pad



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system and Drip Irrigation System

**K2.** Explain the standard procedures to operate the Greenhouse

**K3.** Explain Ideal environment required for crop growth

**Critical Evidence(s) Required**

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

- Monitor and maintain the conditions of tools and equipment
- maintaining and running the Greenhouse
- Monitor the environment inside Greenhouse

**TOOLS AND EQUIPMENT**

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

S. No.	Items
1.	Fans
2.	Exhaust
3.	Pads
4.	Humidifier/fogger
5.	Heater
6.	Frame work
7.	Plythene sheets
8.	Motors
9.	Water reservoir
10.	Pumps
11.	Fertilizer mixer
12.	Pipes including the main and laterals
13.	Drips
14.	Shading nets
15.	Glass sheets

**CS 23: Apply Basic Computer skills to create a variety of Document**

**Overview:**

After completing this competency, the student will be able to apply computing fundamentals and concepts & key critical thinking skills and will be hands on experienced in practicing ethical and appropriate behavior required for the responsible use of technology.

Competency Units	Performance Criteria
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<b>CU1.</b> Determination of computer requirements and assemble procedures	<b>P1.</b> Classify the hardware components of Computer. <b>P2.</b> Assemble the motherboard and other peripherals in casing. <b>P3.</b> Install the computer software for operations of peripherals.
<b>CU2.</b> Installation, Testing and inspection of operating system and applications.	<b>P1.</b> Install the required operating System with Device drivers. <b>P2.</b> Install and execute test of required Application Software <b>P3.</b> Install the necessary plug-ins and other software's and Making the Ghost of Hard Disk and data recovery <b>P4.</b> Check the appropriate operation and execution of system as per standard and demonstrate the test results for the (system requirements) customer satisfaction.
<b>CU3.</b> Apply Input Methods and Execute Basic Computer Operations	<b>P1.</b> Record the speed, accuracy via utilizing keyboarding techniques. <b>P2.</b> Use system tools and program interface <b>P3.</b> Utilize resources to obtain assistance <b>P4.</b> Implement proper network user I.D and procedures, protocol <b>P5.</b> Identify the file formats and extensions. <b>P6.</b> Copy, Paste and send to data from various sources or storage devices <b>P7.</b> Design a (requirement) paperwork to purchase a computer using hardware and software specifications <b>P8.</b> Installation of drivers according to system requirement.
<b>CU4.</b> Prepare/Construct Documents using Spreadsheet Applications	<b>P1.</b> Create, design, Format and edit spreadsheets, charts and graphs <b>P2.</b> Create basic functions/formulas <b>P3.</b> Manipulate multiple worksheets in a workbook <b>P4.</b> Apply advanced functions/formulas
<b>CU5.</b> Construct (prepare) Documents using power point presentation/ Applications	<b>P1.</b> Demonstrate oral presentation Using a specified slide number, duration and a selected theme and back ground <b>P2.</b> Design, create, and deliver a self-running electronic slideshow <b>P3.</b> Design & create Effective Power Point Presentation using advance features.
<b>CU6.</b> Construct (prepare) Documents using Database Applications	<b>P1.</b> Create and manipulate a database <b>P2.</b> Modify database using queries <b>P3.</b> Use import/export features <b>P4.</b> Construct Business Documents using Presentation Applications <b>P5.</b> Apply design and layout principles to presentations
<b>CU7.</b> Use the Communication Networks	<b>P1.</b> Integrate input from software applications <b>P2.</b> Design the Online Classroom Portals <b>P3.</b> Exercise internet surfing. <b>P4.</b> Identify copyright principles before accepting <b>P5.</b> Utilize online productivity tools



**P6.** Apply the security applications.

### **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:** Basic input and out devices and their use.
- K2:** Basics of PDF reports, Web publishing and Ribbon interface.
- K3:** Client-server databases.
- K4:** Facts of internet applications and usages of online communication.
- K5:** Basic hardware configuration required for operating software.
- K6:** Basics of creating documents in Spreadsheet in Excel, word and PDF Applications.
- K7:** Concepts of public domain, copy protection, licensing etc.
- K8:** Database import/export to other Office apps.
- K9:** Safe internet browsing.
- K10:** Understand computer requirements.
- K11:** Understand the installation and configuration procedures of computer hardware and operating system
- K12:** Uses and functions/formulas, charts and graphs
- K13:** Understand, creating the PowerPoint presentations, Formatting and editing, adding, subtracting slide text etc.

### **TOOLS AND EQUIPMENT**

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

S. No.	Items
1.	Videos/ Demos
2.	Computer Accessories
3.	Presentations

### **Critical Evidence(s) Required**

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

Evidence of the following is essential:

- Generate Spreadsheet
- Prepare presentation on Power point
- Perform Internet Browsing



## CS 24: Operate digital media technology

**Overview:** This unit describes the performance outcomes, skills and knowledge required to identify, select and use a digital media package and supporting technologies.

Unit of Competency	Performance Criteria
<b>CU1.</b> Use appropriate OHS office work practices	<b>P1.</b> Use safe work practices to ensure ergonomic, work organization, energy and resource conservation requirements are addressed <b>P2.</b> Use wrist rests and document holders where appropriate <b>P3.</b> Use monitor anti-glare and radiation reduction screens where appropriate
<b>CU2.</b> Identify and select appropriate digital media package	<b>P1.</b> Identify the basic requirements of a design brief, including user environment <b>P2.</b> Research and review suitable available digital media packages <b>P3.</b> Select an appropriate digital media package to meet design brief requirements
<b>CU3.</b> Use digital media package	<b>P1.</b> Procure or create suitable data to meet requirements of the brief <b>P2.</b> Manipulate data using digital media package tools <b>P3.</b> Ensure naming and storing of documents in appropriate file format in directories or folders
<b>CU4.</b> Review digital media design	<b>P1.</b> Evaluate design for creative, dramatic and technical quality, file size, and suitability to meet the brief <b>P2.</b> Test and run any incorporated graphics, video or sound as part of a digital media presentation and present designs in the appropriate format <b>P3.</b> Review final product against design brief

### 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** Basic principles of visual design
- K2** Functions and features of digital media packages and technologies
- K3** Graphic design and stylistic language conventions
- K4** OHS principles and responsibilities for ergonomics, such as work periods and breaks
- K5** Principles of digital imaging and file formats, video and sound file formats, file management and transfer systems
- K6** Vendor product directions in digital media hardware and software
- K7** Visualization and interpreting creative information, scripts (text) and images

### Critical Evidence(s) Required

A person who demonstrates competency in this unit must be able to provide evidence of the ability to identify, select and use a digital media package and supporting technologies. 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.



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Demonstrated evidence of the ability to:

- Identify basic requirements of a design brief
- Use digital media package to meet organizational requirements
- Use OHS principles and responsibilities for ergonomics, such as work periods and breaks
- Use help manuals and online help when appropriate
- Use digital media technologies to support design brief requirements.

### CS 25: Create user documentation

**Overview:** This unit describes the performance outcomes, skills and knowledge required to create user documentation that is clear to the target audience and easy to navigate.

Unit of Competency	Performance Criteria
<b>CU1.</b> Determine documentation standards and requirements	<b>P1.</b> Determine documentation requirements <b>P2.</b> Investigate documentation and industry standards for requirements and determine appropriate application to user documentation <b>P3.</b> Design documentation templates using appropriate software and obtain approval from appropriate person
<b>CU2.</b> Produce user documentation	<b>P1.</b> Conduct a review of the subject system, program, network or application in order to understand its functionality <b>P2.</b> Gather existing technical, design or user specifications and supporting documentation <b>P3.</b> Create user documentation based on template to record the operation of the subject system, program, network or application
<b>CU3.</b> Review and obtain sign-off	<b>P1.</b> Submit user documentation to target audience for review <b>P2.</b> Gather and analyze feedback <b>P3.</b> Make changes to user documentation <b>P4.</b> Submit user documentation to appropriate person for approval

### 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** Content features, including clarity and readability
- K2** Document design, web design and usability
- K3** Functions and features of templates and style guides
- K4** Instructional design principles

### Critical Evidence(s) Required

A person who demonstrates competency in this unit must be able to provide evidence of the ability to create user documentation that is clear to the target audience and easy to navigate.





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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.

Demonstrated evidence is required of the ability to create user documentation that:

- Meets business requirements
- Caters for a diverse readership
- Is clear to the target audience
- Is easy to navigate.

### **CS 26: Create technical documentation**

**Overview:** This unit describes the performance outcomes, skills and knowledge required to create technical documentation that is clear to the target audience and easy to navigate.

<b>Unit of Competency</b>	<b>Performance Criteria</b>
<b>CU1.</b> Identify and analyze documentation requirements and client needs	<b>P1.</b> Consult with client to identify documentation requirements <b>P2.</b> Interpret and evaluate documentation requirements and confirm details with client <b>P3.</b> Investigate industry and documentation standards for requirements <b>P4.</b> Define and document the scope of work to be produced <b>P5.</b> Consult with client to validate and confirm the scope of work
<b>CU2.</b> Design documentation	<b>P1.</b> Identify information requirements with reference to layout and document structure <b>P2.</b> Create document templates and style guides consistent with information requirements <b>P3.</b> Conduct a review of the system in order to understand its functionality <b>P4.</b> Extract content that meets information requirements according to copyright restrictions <b>P5.</b> Develop the structure of the technical documentation giving focus to the flow of information, style, tone and content format <b>P6.</b> Validate the technical documentation structure with the client
<b>CU3.</b> Develop documentation	<b>P1.</b> Write technical documentation based on the template and scope of work using the information gathered <b>P2.</b> Translate technical terminology into plain English where appropriate <b>P3.</b> Apply content format and style according to documentation standards and templates
<b>CU4.</b> Evaluate and edit documentation	<b>P1.</b> Submit technical documentation to appropriate person for review <b>P2.</b> Gather and analyze feedback <b>P3.</b> Incorporate alterations into the technical documentation <b>P4.</b> Edit the technical documentation for technical and grammatical accuracy



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<b>CU5.</b> Prepare documentation for publication	<b>P1.</b> Check that the completed technical documentation meets client requirements and scope of work <b>P2.</b> Submit the technical documentation to appropriate person for approval <b>P3.</b> Prepare the technical documentation for publication and distribution using appropriate channels
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### **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** Content features, such as clarity and readability
- K2** Document design, web design and usability
- K3** Functions and features of templates and style guides
- K4** Instructional design principles
- K5** Organizational policies, procedures and standards that cover document design.

### **Critical Evidence(s) Required**

A person who demonstrates competency in this unit must be able to provide evidence of the ability to create technical documentation that is clear to the target audience and easy to navigate. 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.

Demonstrated evidence is required of the ability to:

- Establish customer needs
- Design and develop technical documentation, such as system, procedures, training material and user guides, incorporating appropriate standards
- Update document with client feedback
- Prepare documentation for publication.

### **CS 27: Use social media tools for collaboration and engagement**

**Overview:** This unit describes the performance outcomes, skills and knowledge required to establish a social networking presence using social media tools and applications. The unit specifically identifies the requirement to review, compare and use different types of social networking tools and applications.

<b>Unit of Competency</b>	<b>Performance Criteria</b>
<b>CU1.</b> Describe different types of social media tools and applications	<b>P1.</b> Explain characteristics of the term social media <b>P2.</b> Identify different types of social-media tools and applications <b>P3.</b> Illustrate some of the issues associated with the use of social media tools and applications
<b>CU2.</b> Compare different types of social media tools and applications	<b>P1.</b> Select one social media type for review <b>P2.</b> Review most popular tools and applications within that social media type



	<b>P3.</b> Itemize benefits across a range of the most popular tools and applications <b>P4.</b> Select most appropriate social media tool or application
<b>CU3.</b> Set up and use popular social media tools and applications	<b>P1.</b> Identify social media tools and applications for possible implementation <b>P2.</b> Initiate preferred social media tools and applications for use <b>P3.</b> Establish social media interface using text and file content <b>P4.</b> Initiate social networking interaction <b>P5.</b> Test and evaluate tools and applications for ease of use <b>P6.</b> Present findings

### **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** Basic technical terminology in relation to social networking and social media applications and tools
- K2** Basic knowledge of uploading images, text files, pdf files, audio files, video files and link associated files
- K3** Features and functions of social media applications
- K4** Import and export software functions
- K5** Linking documents
- K6** OHS principles and responsibilities for ergonomics, including work periods and breaks
- K7** Tagging to facilitate collaborative folksonomy
- K8** Social media applications and procedures for connecting to social networking sites
- K9** Use of input and output devices
- K10** Use of RSS feeds to connect a social network.

### **Critical Evidence(s) Required**

A person who demonstrates competency in this unit must be able to provide evidence of the ability to create technical documentation that is clear to the target audience and easy to navigate. 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.

Demonstrated evidence is required of the ability to:

- Establish customer needs
- Design and develop technical documentation, such as system, procedures, training material and user guides, incorporating appropriate standards

### **CS 28: E-Commerce – SEO (Search Engine Optimization)**

**Overview:** This competency unit covers to develop efficient E-Marketing strategies in accordance with the Vision and Mission statement of the organization driven by Electronic means.



Unit of Competency	Performance Criteria
<b>CU1. SEO (Search Engine Optimization)</b>	<b>P1.</b> Apply SEO techniques <b>P2.</b> Employ SEO key words <b>P3.</b> Demonstrate SEO techniques to priorities their site or web application using automated tools

### 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** SEO Methods including but not limited to Getting Indexed, Preventing Crawling, and Increasing Prominence.

**K2** White-hat, Black-hat SEO techniques for web application

**K3** SEO key words for web pages' translation.

### **Critical Evidence(s) Required**

A person who demonstrates competency in this unit must be able to provide evidence of the ability to write and edit copy that is clear to the target audience and easy to navigate. 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 29: E-Commerce – SCM (Supply Chain Management)**

**Overview:** This competency unit covers to develop efficient E-Marketing strategies in accordance with the Vision and Mission statement of the organization driven by Electronic means.

Unit of Competency	Performance Criteria
<b>CU1. SCM (Supply Chain Management)</b>	<b>P1.</b> Identity potential Suppliers <b>P2.</b> Select the appropriate supplier <b>P3.</b> Place order as per requirement/inventory <b>P4.</b> Inspect received order <b>P5.</b> Maintain Inventory as per Inventory Control / store keeping techniques <b>P6.</b> Identity different available transportation mode <b>P7.</b> Identify steps of reverse SCM i-e from consumer to organization

### 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:



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



- K1** Procurement Cycle (Launch of RFP/RFQ, Tender, Bidding, Comparative Statement, Award of Contract, Maintenance)
- K2** Different techniques to manage
- K3** Product delivery and their traceability
- K4** Incorporation of Outsourcing in logistics.
- K5** Electronic Data Interchange methodologies and format

**Critical Evidence(s) Required**

A candidate who demonstrates competency in this unit must be able to provide evidence of the ability to write and edit copy that is clear to the target audience and easy to navigate. 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 30: E-Commerce – Social Media Marketing**

**Overview:** This competency unit covers to develop efficient E-Marketing strategies in accordance with the Vision and Mission statement of the organization driven by Electronic means.

Unit of Competency	Performance Criteria
<b>CU1. Social Media Marketing</b>	<b>P1.</b> Identify different Social media marketing techniques <b>P2.</b> Apply suitable Classified Advertisement techniques on social media <b>P3.</b> Perform Electronic Mail Marketing <b>P4.</b> Create Blogs

**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:

Describe Knowledge of different social media sites that is Facebook, Twitter, LinkedIn, Google+ etc., Comparative Statement, Award of Contract, Maintenance)

- K1** Brand pages' creation on social media sites.
- K2** Familiarity of banner ads integration on different web sites like newspaper site in any demographic region.
- K3** Skills to regularly update brand/product/service blogs.
- K4** Electronic Data Interchange methodologies and format
- K5** Direct marketing techniques e.g. Email, SMS (Mobile- Commerce) for the projection of company newsletters

**Critical Evidence(s) Required**

A candidate who demonstrates competency in this unit must be able to provide evidence of the ability to implement e-marketing strategies that is clear to the target audience and easy to navigate. 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.