

National Competency Standards for

“Dies and Moulds Technology”

“CNC Machinist”

Level-3



**National Vocational and Technical
Training Commission (NAVTTTC)
Government of Pakistan**

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INTRODUCTION

Dies and mould technology is one of the booming industries of Pakistan. There is an increasing demand of the Dies and mould technologist. Therefore, the skills are required to be inducted in the future generation. If an individual is planning to pursue a career in dies and mould technology, this program will be helpful in targeting various industries including mechanical, electrical, automobile, hydraulics, computers, home appliances, ceramics, household products, plastic (especially furniture, Food packaging, crockery and aerospace sector)etc. If an individual is planning to take up a dies & mould technology course, this course will help him/her weigh their choices better.

Keeping in view of the above the competency based national vocational qualifications have been developed by NAVTTC to train the unskilled human resource on the technical and entrepreneurial skills to be employed / self-employed and inevitably set sustainable impact on their lives by increase in their livelihood income.

Training Course is based on competency standards which are defined by the industry and the traditional role of a trainer changes and shifts towards the facilitation of training. A trainer encourages and assists trainees to learn for themselves. Trainees are likely to work in groups (pairs) and all doing something different. Some are doing practical tasks in the workshop, some writing, some not even in the classroom or workshop but in another part of the building using specialist equipment, working on computers doing research on the Internet or the library. As trainees learn at different pace they might well be at different stages in their learning, thus learning must be tailored to suit individual needs. The following facilitation methods (teaching strategies) are generally employed

PURPOSE OF THE QUALIFICATION

The purpose of the training is to provide skilled manpower to improve the existing dies & mould industry. This will improve the quality in different industrial sectors by Die & Mould associate engineers and the availability of skilled professionals will bring socio-economic benefits to all stakeholders. The specific objectives of developing these qualifications are as under:

- Improve the professional competence of die & mould associate engineer
- Capacitate the local community and trainers in modern CBT training, methodologies and processes as envisaged under NVQF
- Provide flexible pathways and progressions in the Dies & mould sector.
- Enable the trainees to perform their duties in efficient manner
- Establish a standardized and sustainable system of training die & mould associate engineer in Pakistan

DATE OF VALIDATION

This national vocational qualification (NVQ) has been validated by the Qualifications Development Committee (QDC) in 25th to 29th Jan, 2021 and will remain in currency until 20th Jan 2031.

*Shall be reviewed after 3 years

CODE OF QUALIFICATION

Qualification Title	Code
National Vocational Certificate Level 3, in (Dies and Mould Technology) "CNC Machinist"	

ENTRY REQUIREMENT

- For National Vocational Certificate Level-3 in "CNC Machinist" (Dies and Mould Technology), the entry requirement is award of National Vocational Certificate Level-2 in "Machinist".

QUALIFICATIONS DEVELOPMENT COMMITTEE

The following members participated in the qualification development of these qualifications:

Sr · N o.	Name	Designation	Organization	Email	Contact No.
1.	Mehwish Aisha Ahsan	DACUM Facilitator	CBT Expert/Certified Assessor	mehwish.aisha.ahsan@gmail.com	03015050713
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QUALIFICATIONS REVIEW AND VALIDATION COMMITTEE

The following members participated in the qualification development of these qualifications:

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SUMMARY OF COMPETENCY STANDARDS

CNC Machinist in Dies and Mould Technology 6 Months

Code	Competency Standards	Level	Theory		Practical		Total	
			C	Hr.	C	Hr.	C	Hr.
1.	A-Identify and implement Workplace Policies and Procedures	3	1	10	1	10	2	20
2.	B-Apply work health and safety practices (WHS)	3	2	20	1	10	3	30
3.	C-Communicate at workplace	3	2	20	1	10	3	30
4.	D-Perform CNC Lathe operations	3	4.1	41	9.9	99	14	140
5.	E-Perform Milling Operations	3	4.1	41	9.9	99	14	140
6.	F-Perform 2D & 3D Engineering Drawings using CAD	3	2.1	21	9.9	99	12	120
7.	G-Perform Welding Operations	3	2.1	21	9.9	99	12	120
Total			17.4	174	42.6	426	60	600

Competency Standard A: 041700840 Identify and Implement Workplace policies and Procedures

Overview: This unit describes the skills and knowledge required to develop and implement a workplace policy & procedures and to modify the policy to suit changed circumstances. It applies to individuals with managerial responsibilities who undertake work developing approaches to create, monitor and improve strategies and policies within workplaces and engage with a range of relevant stakeholders and specialists.

Competency Units	Performance Criteria
CU1. Identify workplace policy & procedures	You must be able to: P1. Identify the workplace policy & procedures P2. Apply appropriate strategies that can be used to measure whether your workplace health and safety obligations are being met. P3. Assure the policies are realistic, resources and personnel to implement P4. Implement the policy & procedures that reflects the organizations commitments P5. Ensure the appropriate methods of implementation, outcomes and performance indicators
CU2. Implement workplace policy & procedures	You must be able to: P1. Apply and assign responsibility for recording systems to track continuous improvements in policy & procedures P2. Implement strategies for continuous improvement in effective and efficient information
CU3. Communicate workplace policy & procedures	You must be able to: P1. Communicate procedures to help implement workplace policy P2. Inform those involved in implementing the policy about expected outcomes, activities to be undertaken and assigned responsibilities
CU4. Review the implementation of workplace policy & procedures	You must be able to P1. Identify the trends that may require remedial actions P2. Record the trends that may require remedial actions. P3. Ensure policy and procedures as required are made for continuous improvement of performance

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:

- Legislation, regulations and codes of practice applicable to the organization
- internal and external sources of information and organizational policy & procedures
- Typical barriers to implementing policies and procedures in an organization.

Critical Evidence(s) Required

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

- Identify evidences of the ability to implement work place policy and procedures.
Briefly identify work place procedures to avoid incident.

Competency Standard B: 102200846 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 in OHS practices in process.

Competency Units	Performance Criteria
CU1. Implement safe work practices at work place	<p>You must be able to</p> <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>You must be able to</p> <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>You must be able to</p> <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>You must be able to</p> <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 & 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:

- Outline the WHS rights and responsibilities that apply to own role
- Explain the term duty of care
- Describe typical health and safety roles in the workplace
- List and describe common safety signs and symbols
- Explain procedures for reporting hazards, risks, incidents and accidents
- Identify and describe common hazards and major causes of accidents relevant to the workplace
- Explain what the term risk control means
- 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.

Competency Standard C: Communicate at Workplace

Overview: This unit describes the performance outcomes, skills and knowledge required to develop communication skills in the workplace. It covers gathering, conveying and receiving information, along with completing assigned written information under direct supervision.

Competency Units	Performance Criteria
CU1. Communicate within the organization	<p>You must be able to</p> <p>P1. Communicate within a department P2. Communicate with other departments. P3. Use various media to communicate effectively P4. Communicate orally and written</p>
CU2. Communicate outside the organization	<p>You must be able to</p> <p>P1. Deal with vendors P2. Deal with clients/customers P3. Interact with other organisations P4. Use various media to communicate effectively P5. Work with people of different cultures / backgrounds</p>
CU3. Communicate effectively in work group	<p>You must be able to</p> <p>P1. Assess the issues to provide relevant suggestion to group members P2. Resolve the issues/ problems /conflicts within the group P3. Arrange group working sessions to increase the level of participation in the group processes P4. Communicate messages to group members clearly to ensure interpretation is valid P5. Communicate style /manner to reflect professional standards/ awareness of appropriate cultural practices P6. Act upon constructive feedback</p>
CU4. Communicate in writing	<p>You must be able to</p> <p>P1. Identify relevant procedures for written information P2. Use strategies to ensure correct communication in writing.i.e. <ul style="list-style-type: none"> • correct composition • clarity • comprehensiveness • accuracy • appropriateness P3. Draft assigned written information for approval, ensuring it is written within designated timeframes P4. Ensure written information meets required standards of style, format and detail P5. Seek assistance / feedback to aid communication skills development</p>

Knowledge & Understanding

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

- Importance of intra and inter organizational communication
- Basics of business communication
- Defining Modes of communication
- Effective communication in work group
- Communicating through writing
- The importance of teamwork

Critical Evidence(s) Required

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

- In your current position, what types of written communication do you use most often? (List them all).

Competency Standard D: Perform CNC Lathe Operations

Overview: This competency standard deal with learning the competencies needed to perform CNC Lathe operations. That includes generating the program, run simulation and mounts the job on CNC Lathe machine. It will also allow you to carry out CNC Lathe Operations. Your underpinning knowledge will be sufficient to provide you the basis for your work.

Competency Units	Performance Criteria
CU1. Generate the program	<p><i>You must be able to:</i></p> <p>P1. Interpret job requirements to remove extra material as per drawing/design</p> <p>P2. Select absolute or incremental coordinates system (tool-path strategies, machining features and for generating the tool-path) as per requirement</p> <p>P3. Generate appropriate part programming credentials (Sequence, G-codes, M-codes, coordinates, feed, speed, tooling information etc.) according to the CNC machine control unit</p> <p>P4. Maintain the record of generated program</p>
CU2. Run Simulation	<p><i>You must be able to:</i></p> <p>P1. Feed the generated part program into appropriate simulation platform</p> <p>P2. Run simulation and verify movements of tool/cutter to get same results as per defined sequence</p> <p>P3. Correct the errors (if any) and modify the program as per defined procedure</p>
CU3. Set the Job and Tool on CNC Lathe Machine	<p><i>You must be able to:</i></p> <p>P1. Select appropriate tool & clamping device according to the job requirement.</p> <p>P2. Manage the measuring instruments as per job requirement.</p> <p>P3. Mount the work-piece as per job requirement according to the drawing/design</p> <p>P4. Clamp the job firmly as per standards using appropriate work holding device(s) in order to achieve dimensional accuracy</p> <p>P5. Check the alignment of job in chuck</p> <p>P6. Mount the tools in tool post/tool turret as per job requirement</p> <p>P7. Perform off-set setting (tool compensation) of the tools as per reference point of work piece</p>

CU4. Carry out CNC Lathe Operations	<p><i>You must be able to:</i></p> <p>P1. Ensure to control the safe operation of working on CNC machines before executing part program according to the safety measures</p> <p>P2. Control the feed and speed override of machine before and during the operation according to the requirement</p> <p>P3. Switch machine to execution mode (single block or auto) and press cycle start to run the program</p> <p>P4. Inspect the work piece accuracy and precision according to the drawing/design and take appropriate action in case of any error.</p> <p>P5. Check quality of the component at suitable intervals.</p> <p>P6. Shut down the machine at safe position after finishing the work.</p>
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Knowledge & Understanding

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

- Engineering drawings
- Types and uses of measuring instruments required during CNC lathe operations
- Mechanism and working of CNC lathe machine
- Control panel and commands
- Coordinate calculation techniques
- Programming techniques for CNC lathe
- Simulation of program
- Use of Turret /Tool-post and their sequence of tool mounting
- Possible accidents and their preventive measures
- Types of coolants and their usage
- Off-set and compensation settings of Tools and workpiece
- Feed and speed concepts in Lathe Machine
- Lathe operations such as Facing, Turning, Drilling, Grooving, Threading, Knurling, Boring etc
- Use of Lathe tools and their types with respect to operations and materials

Critical Evidence(s) Required

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

- Prepare a program and complete the Job on CNC Lathe Machine according to the given Drawing

Competency Standard E: Perform Advance Milling Operations

Overview: This competency standard deal with learning the competencies needed to perform advance milling operations. That includes set a milling machine for a job, workpiece setting for milling operations and. It will also allow you to prepare a job/ Milling Operations as per drawing and inspect the job as per drawing. Your underpinning knowledge will be sufficient to provide you the basis for your work.

Competency Units	Performance Criteria
CU1. Prepare Milling machine for operation	<p><i>You must be able to:</i></p> <p>P1. Select appropriate tool & clamping device according to the job requirement.</p> <p>P2. Manage the measuring instruments as per job requirement.</p> <p>P3. Mount the cutter as per standard procedure</p> <p>P4. Set machine parameters according to the job requirement</p> <p>P5. Arrange cutting fluid as per job requirement</p>
CU2. Perform workpiece setting for Milling operation	<p><i>You must be able to:</i></p> <p>P1. Verify the dimension of material according to the drawing.</p> <p>P2. Identify appropriate clamping device and check its alignment on machine table</p> <p>P3. Clamp the workpiece as per requirement</p> <p>P4. Dial the work piece & ensure final clamping</p>
CU3. Prepare a job/ Milling Operation as per drawing	<p><i>You must be able to:</i></p> <p>P1. Perform pocketing as per given instructions</p> <p>P2. Perform contouring as per given instructions</p> <p>P3. Perform Drilling and Boring as per given instructions</p> <p>P4. Perform Indexing as per given instructions</p> <p>P5. Perform Gear Cutting as per given instructions</p>
CU4. Inspect the job as per drawing	<p><i>You must be able to:</i></p> <p>P1. Perform deburring of the job using appropriate tool</p> <p>P2. Inspect the job using appropriate measuring tool</p> <p>P3. Perform cleaning/deburring of the job using appropriate tool</p> <p>P4. Inspect the job using appropriate measuring tool</p> <p>P5. Check quality of the component at suitable intervals.</p> <p>P6. Shut down the machine at safe position after finishing the work.</p>

Knowledge & Understanding

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

- Basic engineering drawings
- Types and uses of measuring instruments required during milling operations
- Types of Milling machines & their usage
- Parts of milling machine
- Different types of attachment used on milling machine
- Types and applications of clamping devices for milling machine
- Machine parameter settings
- Sequence of operations to achieve the job requirements
- Types of milling cutters
- Types of work piece materials and cutters materials
- Types of milling cutters & tool geometry
- Conventional and climb milling techniques and their applications
- Applications of dividing heads and rotary tables
- Procedures of indexing calculations
- Types of Gears and their cutting techniques

Critical Evidence(s) Required

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

- Perform Drilling and Boring
- Perform Contouring
- Perform Pocketing
- Perform Gear Cutting

Competency Standard F: Perform 2D &3D Engineering Drawings using CAD Software

Overview: This competency standard deal with learning the competencies needed to create 2D and 3D drawings by using various tools and commands in computer. You can create and modify objects and drawings in CAD software to meet specific intentions according to job requirements. Your underpinning knowledge will be sufficient to provide you the basis for your work.

Competency Units	Performance Criteria
CU1. Draw 2D shapes	<p>You must be able to:</p> <p>P1. Setup user interface settings for required drawing.</p> <p>P2. Create different 2D shapes with given measurements.</p> <p>P3. Edit different 2D shapes to meet requirement.</p> <p>P4. Insert dimensions and symbols as per requirement</p> <p>P5. Save the file in different drawing formats</p>
CU2. Prepare final sets of 2D drawings	<p>You must be able to:</p> <p>P1. Develop 2D Drawing with given project specification and measurements.</p> <p>P2. Plot drawing on scale according to required size & orientation.</p>
CU3. Develop 3D Objects	<p>You must be able to:</p> <p>P1. Setup 3D user interface settings for required drawing.</p> <p>P2. Create different 3D objects with given measurements.</p>
CU4. Manipulate 3D objects using 3D Editing Tools	<p>You must be able to:</p> <p>P1. Modify 3D objects in line with the requirements.</p> <p>P2. Make customized 3D models according to the requirement of given job.</p> <p>P3. Generate orthographic views from 3D model</p> <p>P4. Generate sectional/auxiliary views from 3D model as per requirement</p>
CU5. Render 3D Model	<p>You must be able to:</p> <p>P1. Apply material to required 3D Model as per given specification</p> <p>P2. Render and print the 3D model according to required size & orientation.</p> <p>P3. Apply texture to 3D model as per requirement.</p>

Knowledge & Understanding

The candidate must be able to demonstrate underpinning knowledge and

understanding required to carry out the tasks covered in this competency standard. This includes the knowledge of:

- 2CAD drawings
- Dimensioning techniques and drawing symbols
- 3D modelling in AutoCAD
 - 3D solids
 - surfaces
 - meshes
 - Wireframe objects
 - Difference between Surface Modelling and Solid Modelling.
- Boolean operation on 3D solid model
 - Subtraction
 - Intersection
 - Union
- 3D Navigate control
 - Pre-set views such as isometric, top, bottom, front, left, etc.
 - Perspective projection and parallel projection
 - Constrained Orbit
- Material and light control
- Insert Standard parts from CAD library

Critical Evidence(s) Required

The candidate needs to produce any or all of the following documents/evidences:

1. Portfolio
2. 2D Drawings with given project specification and measurements.
3. Make customized 3D models and generate different 2D/3D views on layout according to the requirement of given job.

Competency Standard G: Perform Welding Operations

Overview: This competency standard deal with learning the competencies needed to execute basic welding operations. That includes oxy acetylene welding, shielded metal arc welding (smaw), gas welding on mild steel plate, fillet welds on carbon steel plate by using gas metal arc welding (gmaw), soldering operation, brazing operation and post welding operations. You can also produce different types of oxy acetylene flames. Your underpinning knowledge will be sufficient to provide you the basis for your work.

Competency Units	Performance Criteria
CU1. Produce different types of Oxy Acetylene Flames	<p>You must be able to:</p> <p>P1. Check pressure from gauges on Oxygen and Acetylene cylinder</p> <p>P2. Check gas manifold system</p> <p>P3. Open Acetylene gas valve slightly and light the torch with spark lighter</p> <p>P4. Open oxygen gas valve slightly to balance the both gases as per requirement of flame:</p> <ul style="list-style-type: none"> ✓ Produce oxidizing flame ✓ Produce neutral flame ✓ Produce carburising flame
CU2. Perform Oxy Acetylene Welding	<p>You must be able to:</p> <p>P1. Take work pieces as per drawing</p> <p>P2. Grind the work pieces on grinding machine to prepare the edges flat and parallel to each other</p> <p>P3. Place the Bottom piece on work table and place the top plate along the marked line</p> <p>P4. Set the flame of welding torch as per standard</p> <p>P5. Complete the bead as per standard</p>
CU3. Perform oxy-acetylene Flame Cutting Operations	<p>You must be able to:</p> <p>P1. Take work pieces as per drawing</p> <p>P2. Perform layout marking on workpiece for cutting as per requirement</p> <p>P3. Set the flame of welding torch in oxidizing flame as per standard</p> <p>P4. Start cutting of work piece while maintaining standard distance between welding torch nozzle and work piece</p> <p>P5. Complete the cut as per requirement</p>
CU4. Perform Shielded Metal Arc Welding (SMAW)	<p>You must be able to:</p> <p>P1. Adjust welding parameters (current, voltage etc.) as per welding procedure specifications/job requirement to produce acceptable weld</p> <p>P2. Maintain gap between electrode and base metal as per standard practices</p> <p>P3. Carry out welding as per given metal properties.</p> <p>P4. Deposit root pass as per welding procedure specifications/job requirements</p>

	<p>P5. Deposit filling passes as per welding procedure specifications/job requirements</p> <p>P6. Deposit capping pass as per welding procedure specifications/job requirements</p> <p>P7. Check root, filling and capping passes for any visual discontinuities as per acceptance standards</p> <p>P8. Follow applicable manufacturing codes and standards for acceptance criteria of visual welding defects</p>
<p>CU5. Make Fillet Welds on Carbon Steel Plate by using. Gas Tungsten Arc Welding (GTAW)</p>	<p>You must be able to:</p> <p>P1. Adjust welding parameters (current, voltage etc.) as per welding procedure specifications/job requirements to produce acceptable weld</p> <p>P2. Maintain gap between electrode and base metal as per standard practices</p> <p>P3. Carry out welding in Vertical (3F) and Vertical (3G) positions following standard procedures</p> <p>P4. Deposit root pass as per welding procedure specifications/job requirements</p> <p>P5. Deposit filling passes as per welding procedure specifications/job requirements</p> <p>P6. Deposit capping pass as per welding procedure specifications/job requirements</p> <p>P7. Check root, filling and capping passes for any visual discontinuities as per acceptance standards</p> <p>P8. Follow applicable manufacturing codes and standards for acceptance criteria of visual welding defects</p>
<p>CU6. Make Fillet Welds on Carbon Steel Plate by using. Gas Metal Arc Welding (GMAW)</p>	<p>You must be able to:</p> <p>P1. Adjust welding parameters (current, voltage, wire feed speed etc.) as per welding procedure specifications/job requirements to produce acceptable weld</p> <p>P2. Maintain gap between electrode and base metal as per standard practices</p> <p>P3. Carry out welding in Vertical (3F) and Overhead (4F) positions following standard procedures</p> <p>P4. Follow applicable manufacturing codes and standards for acceptance criteria of visual welding defects</p>
<p>CU7. Perform Soldering Operation</p>	<p>You must be able to:</p> <p>P1. Perform marking as per drawing</p> <p>P2. Cut the metal sheet according to drawing using shearing machine</p> <p>P3. Straighten the material with help of hammer</p> <p>P4. File work if required</p> <p>P5. Perform soldering operation as per standard</p>
<p>CU8. Perform Brazing Operation</p>	<p>You must be able to:</p> <p>P1. Perform marking as per drawing</p>

	<p>P2. Cut the metal sheet according to drawing using shearing machine</p> <p>P3. Straighten the material with help of hammer</p> <p>P4. File work if required</p> <p>P5. Open gas cylinder with the help of cylinder key</p> <p>P6. Adjust pressure of both gas cylinders with the help of regulator</p> <p>P7. Select the correct size of the nozzle</p> <p>P8. Set flame to carburizing flame as per standard</p> <p>P9. Use copper filler rod as filler metal</p> <p>P10. Perform brazing as per standard</p>
CU9. Perform Post Welding Operations	<p>You must be able to:</p> <p>P1. Carry out finishing work of welds following standard procedures</p> <p>P2. Inspect weld visually and mark any visual defects, as required</p> <p>P3. Carry out repair work in accordance with approved procedures, as required</p> <p>P4. Clean work area in accordance with workplace safety practices</p> <p>P5. Maintain and store tools/equipment/consumable materials in accordance with organization guidelines</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:

- Various types of welding processes
- Advantages of gmaw
- Principle of mig welding
- Various welding positions
- Specifications/ classification of electrode/s required for the job
- Electrical parameters like (voltage, current etc.) and their effects on welding
- Welding techniques as per WPS/instruction sheet
- Welding procedure specifications (WPS)
- Method of Pre- heating of base metal
- Fillet lap joint
- Tee-fillet joint
- Corner joint
- Butt joint
- Polarity setting according to standard specifications

- Factors to be considered in TIG welding like type and thickness of the base metal, current type and polarity, type of shielding gas to be used
- Visual welding defects
- Welding codes and standards
- Purpose of using shielding gas in TIG welding
- Various gases/combination of gases for shielding
- Gas Tungsten Arc Welding (GTAW)
- Soldering
- Sheet metal gauge
- Disadvantages of soldering
- Brazing
- Carburizing flame
- Neutral flame
- Oxidizing flame

Critical Evidence(s) Required

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

- Perform Shielded Metal Arc Welding (SMAW) on given job
- Perform oxy-acetylene Flame Cutting Operation on given job
- Perform Oxy Acetylene Welding on given job
- Perform Brazing/ Soldering Operation
- Perform Gas Tungsten Arc Welding (GTAW) on give job
- Perform Gas Metal Arc Welding (GMAW) on given job

COMPLETE LIST OF TOOLS AND EQUIPMENT

SR#	Tools & Equipment	Quantity
1.	Computer Systems	26
2.	Scanner	1
3.	Printer	1
4.	Hardness Testers	1
5.	Universal testing machine(UTM)	1
6.	Impact Testing Machines	1
7.	Lathe machine with accessories	5
8.	Lathe Tools(Facing, Threading, Knurling, Parting off, Forming etc)	10each
9.	Drilling machine with accessories	5
10.	Drilling tools (twist drill, center drill, counter boring tool , reamer, taps etc)	10 each
11.	Milling Machine with accessories	5
12.	Milling tools(End mill, Ball nose, Face mill, Side and face mill, Slab mill, Convex cutter, Concave cutter, Dovetail cutter, Involute cutter ,etc)	10 each
13.	CNC Lathe/Turning centre with tools and accessories	5
14.	CNC Milling/Machining centre with tools and accessories	5
15.	CNC EDM Sinker Machine with accessories	2
16.	CNC EDM Wire Cut Machine with accessories	2
17.	EDM Small Hole Drilling Machine with accessories	1
18.	Surface Grinding Machine with accessories and consumables	2
19.	Cylindrical Grinding Machine with accessories and consumables	2
20.	Pedestal Grinder with accessories and consumables	2
21.	Tool and cutter Grinder with accessories and consumables	2
22.	Shaper Machine with accessories	2
23.	Planer Machine with accessories	1
24.	Jig Grinding Machine with accessories	1
25.	Jig Boring Machine with accessories	1
26.	Steel Rules	10
27.	Tri Square	10
28.	Inside Vernier Caliper	10
29.	Odd leg Vernier Caliper	10

30.	Trammel Vernier Caliper	10
31.	Outside Vernier Caliper	10
32.	Vernier Depth gauge	5
33.	Vernier Bevel protractor	5
34.	Thread gauges	5
35.	Screw pitch gauges	5
36.	Fillet gauges	5
37.	Feeler gauges	5
38.	Vernier Height gauge	5
39.	Dial indicators with magnetic stand	5
40.	Vernier Micrometer	5
41.	Inside Micrometer	5
42.	Outside Micrometer	10
43.	Depth Micrometer	5
44.	Snap Gauge set	2
45.	Dial Bore Gauge	5
46.	Set of Adjustable Wrench	5
47.	Set of Spanners (Open end, Ring)	5 each
48.	Pipe wrench	2
49.	Pipe Dies	2
50.	L-key sets	5
51.	Nose pliers	5
52.	Grip pliers	5
53.	Straight peen Hammer	5
54.	Ball peen Hammer	5
55.	Mallets Hammer	5
56.	Claw Hammer	5
57.	Long nose Tong	5
58.	Short nose tong	5
59.	Flat Chisel	5
60.	Scraper of different shapes	5 each
61.	scriber	10
62.	Hand hacksaw	25

63.	Chipping hammer	10
64.	Oxy acetylene welding torch	10
65.	Tip cleaners	5
66.	Oxy acetylene welding cylinder set(oxygen, C ₂ H ₂)	5
67.	Oxy acetylene welding table	5
68.	Welding gloves	10 set
69.	Face screen	10
70.	Goggles	10
71.	Electric arc welding transformer	5
72.	Electric arc welding pliers	5
73.	Disc grinder 4 inch	5
74.	Disc cutter	5
75.	Electric arc welding table	5
76.	Welding electrode of different size & grade	10 packs
77.	3D scanner	1
78.	3D printer	1
79.	Rockwell Hardness tester	1
80.	Brinell Hardness tester	1
81.	Vicker Hardness tester	1
82.	Mould polishing stones(Mesh no 240 to 1200)	10 each
83.	Sand papers of different grade(Mesh no 180 to 2000)	10 each
84.	Diamond Paste tubes of different grades (Micron 2500 to 5000)	2 each
85.	Ceramics stones of different grades (Mesh no 300 to 1200)	5 each
86.	Diamond hand file set	5 set
87.	Riffle hand file set	5
88.	Needle hand file set	5
89.	Round hand file	5
90.	Half round hand file	5
91.	Triangular hand file	5
92.	Square hand file	5
93.	Flat hand file	5
94.	Ultra sonic Polishing box	2

95.	Drawing board	25
96.		

Digital Skills

1- Create Basic Databases

Overview:

This unit describes the skills and knowledge required to design, develop and test a database in order to meet a specification. It applies to individuals who may be either database, or web designers, required to create a simple database to store information for an online application, using a simple entity relational database.

Unit of Competency	Performance Criteria
CU1. Analyse the requirements for the database	<p>P1. Determine the information that the database is required to hold</p> <p>P2. Develop a written requirement report for the functionality of the database</p> <p>P3. Complete the documentation, and submit it to the appropriate person for approval</p>
CU2. Use data modelling to design the database to suit requirements	<p>P1. Design an entity-relationship (ER) diagram to model the relationships between the entities and the attributes that the database will hold</p> <p>P2. Develop primary and foreign keys to link the entities</p> <p>P3. Develop a data dictionary</p> <p>P4. Complete the documentation, and submit it to the appropriate person for approval</p>
CU3. Create a database on a web or database server	<p>P1. Use the appropriate language on a web or database server to create one or more databases</p> <p>P2. Use the appropriate language on a web or database server to create tables</p> <p>P3. Populate the database fields</p>
CU4. Test the database and debug	<p>P1. Test the database on the web or database server</p> <p>P2. Ensure that the information represented matches the requirements</p>

Knowledge and understanding

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

- Principles of open platforms, including browsers and databases
- Processes associated with the creation of entities, attributes, and I populating fields, using both software solutions and script- based input
- Describe data-modelling techniques to design a database

- Steps in database design, modelling and implementation
- Internet operation related to web servers and clients
- Naming conventions appropriate to database design
- Security restrictions on servers, incorporating some theoretical concepts
- Best practice communication, and accessibility, for audiences with special needs.

Critical Evidence(s) Required

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

- Extract required data fields from a relation.

2- Install Office Application Suit

Overview:

This competency intends to provide knowledge and skills on preparation of MS Office suit installations and up-gradation. It also deals with MS Office suit component addition, repair, and removal.

Competency Units	Performance Criteria
CU1. Install software applications	<p>P1. Ensure that necessary precautions have been taken before installing MS Office suit</p> <p>P2. Register a software with the help of its key</p> <p>P3. Install a software application carefully as per given instructional manual</p> <p>P4. Select required MS Office component for customized / full installation</p> <p>P5. Select appropriate location for installation of the components</p> <p>P6. Finish installation</p>
CU2. Up-grade the MS Office suit	<p>P1. Select the up gradation package of the MS Office (Offline / Online)</p> <p>P2. Run the selected package</p> <p>P3. Perform the required actions i.e. restart to apply the changes</p>
CU3. Add or remove MS Office suit components	<p>P1. Select the office suit package</p> <p>P2. Run the selected office suit</p> <p>P3. Select the add / remove option to perform the task</p> <p>P4. Restart the computer to ensure add/ remove task</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:

- Understand different software applications.
- Explain the procedure to install a software application as per given instructional manual.

Critical Evidence(s) Required

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

- Perform MS Office suit installation compatibility

3- Format Document in MS Word

Overview:

This basic module intends to provide knowledge and skills on preparation of word documents. It also deals with basic interface, tools/menu management, safety aspects, and word processing software handling techniques.

Competency Units	Performance Criteria
CU1. Install software applications	P1. Ensure that necessary precautions have been taken before installing any software application P2. Register a software with the help of key P3. Install a software application carefully as per given instructional manual
CU2. Type a Word Document	P1. Open a new word file P2. Give a name and location to save the word file P3. Type in a MS word file with the help of any suitable typing tutor P4. Ensure that typed document is spelling error free P5. Develop the typing speed at least 20 words per minute P6. Open and use some typing tutor programs P7. Use systematic keyboard / finger setting preferably with both hands P8. Perform some online typing test and to make sure that required typing outcome has been achieved through online evaluation P9. Make typing in MS word
CU3. Set-up page in a Word Document	P1. Apply the page margins on the word document P2. Set a suitable orientation P3. Set the suitable size of the page P4. Insert some columns in the word file where appropriate P5. Perform Page set-up in the given any word file document P6. Ensure new page is added to be edited/worked on.
CU4. Edit Word Document	P1. Edit a typed word document P2. Insert a new word or delete a word in the MS word file P3. Insert a new paragraph or delete a paragraph in the MS word file P4. Add or delete a page or group of paragraph through selection P5. Check the spellings in the word file through available dictionary P6. Edit a MS document is as per the given specification / criteria / demand
CU5. Add image in the MS word document	P1. Open the MS word document P2. Select image insert option P3. Select the required image

	P4. Add caption to the image P5. Adjust image as per requirement
CU6. Insert header , footer in MS word document	P1. Open the MS word document P2. Insert header / footer as per requirement P3. Insert page number in footer P4. Insert document title in header P5. Close header and footer view
CU7. Apply basic formatting to MS word document	P1. Add bullets and number to list in MS word document P2. Apply indentation P3. Apply line spacing as per requirement in MS word document P4. Apply super scripts and sub scripts P5. Insert text box P6. Apply word art P7. Apply font setting
CU8. Insert table	P1. Insert table P2. Add/Delete Row P3. Add/Delete Column

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.** Define header and footer
- K2.** Explain indentation
- K3.** Explain Font Setting
- K4.** Explain Table setting

Critical Evidence(s) Required

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

- Produce a word documents which contains the information in form of text, image, table.

4- Operate Spreadsheet Applications

Overview:

This competency intends to provide knowledge and skills on preparation of spreadsheets. It also deals with basic interface, tools/menu management and spreadsheets handling techniques.

Competency Unit	Performance Criteria
CU1. Create spreadsheets	P1. Open the spreadsheet application, create spreadsheet files and enter numbers, text and symbols into cells according to information requirements P2. Enter simple formulas and functions using cell referencing

	<p>when required</p> <p>P3. Correct formulas when error messages occur</p> <p>P4. Use a range of common tools during spreadsheet development</p> <p>P5. Edit columns and rows within the spreadsheet</p> <p>P6. Use the auto-fill function to increment data where required</p> <p>P7. Save the spreadsheet to a folder on a storage device</p>
CU2. Customize basic settings	<p>P1. Adjust page layout to meet user requirements or special needs</p> <p>P2. Open and view different toolbars</p> <p>P3. Change font settings so they are appropriate for the document purpose</p> <p>P4. Change alignment options and line spacing according to spreadsheet formatting features</p> <p>P5. Format cell to display different styles as required</p> <p>P6. Modify margin sizes to suit the purpose of the spreadsheets</p> <p>P7. View multiple spreadsheets concurrently</p>
CU3. Format spreadsheet	<p>P1. Use formatting features as required</p> <p>P2. Copy selected formatting features from another cell in the spreadsheet or from another active spreadsheet</p> <p>P3. Use formatting tools as required within the spreadsheet</p> <p>P4. Align information in a selected cell as required</p> <p>P5. Insert headers and footers using formatting features</p> <p>P6. Save spreadsheet as another file type</p> <p>P7. Save to storage device and close spreadsheet</p>
CU4. Incorporate object and chart in spreadsheet	<p>P1. Import an object into an active spreadsheet</p> <p>P2. Manipulate imported object by using formatting features</p> <p>P3. Create a chart using selected data in the spreadsheet</p> <p>P4. Display selected data in a different chart</p> <p>P5. Modify chart using formatting features</p>
CU5. Print spreadsheet	<p>P1. Preview spreadsheet in print preview mode</p> <p>P2. Select basic printer options</p> <p>P3. Print spreadsheet or selected part of spreadsheet</p> <p>P4. Submit the spreadsheet to appropriate person for approval or feedback</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 how to open a new or saved workbook in MS Excel.
- K2.** Explain how to save file in MS Excel.
- K3.** Explain how to apply the page margins in MS Excel.
- K4.** Define page set-up for MS Excel.
- K5.** Define Basic Formulas.
- K6.** Explain editing, Add or delete data in MS Excel.

Critical Evidence(s) Required

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

- create spreadsheets
- customize basic settings
- Format spreadsheets
- create basic formulas
- insert objects and charts in spreadsheets
- Save and print spreadsheets.

5- Create Presentation in MS PowerPoint

Overview:

This competency intends to provide knowledge and skills on preparation of presentation. It also deals with basic interface, tools/menu management and presentation handling techniques

Unit of Competency	Performance Criteria
CU1. Create presentations	<p>P1. Open presentation package and create a simple design for a presentation according to organizational requirements</p> <p>P2. Open blank presentation and add text and graphics</p> <p>P3. Apply existing styles within a presentation</p> <p>P4. Use presentation template and slides to create a presentation</p> <p>P5. Use various tools to improve the look of the presentation</p> <p>P6. Save presentation to the appropriate storage device and folder</p>
CU2. Customize basic settings	<p>P1. Adjust display to meet user requirements</p> <p>P2. Open and view different toolbars to view options</p> <p>P3. Ensure font settings are appropriate for the presentation purpose</p> <p>P4. View multiple slides at once</p>
CU3. Format presentations	<p>P1. Use and incorporate organizational charts and bulleted lists, and modify as required</p> <p>P2. Add objects and manipulate to meet presentation purposes</p> <p>P3. Import objects and modify for presentation purposes</p> <p>P4. Modify slide layout, including text and colours, to meet presentation requirements</p> <p>P5. Use formatting tools as required within the presentation</p> <p>P6. Duplicate slides within and across a presentation</p> <p>P7. Reorder sequence of slides and delete slides for presentation purposes</p> <p>P8. Save presentation in another format</p> <p>P9. 9- Save to storage device and close presentation</p>

CU4. Add slide show effects	<p>P1. Incorporate pre-set animation and multimedia effects into presentation as required to enhance the presentation</p> <p>P2. Add slide transition effects to presentation to ensure smooth progression through the presentation</p> <p>P3. Test presentation for overall effect</p> <p>P4. Use onscreen navigation tools to start and stop slide show or move between different slides as required</p>
CU5. Print presentation and notes	<p>P1. Select appropriate print format for presentation</p> <p>P2. Select preferred slide orientation</p> <p>P3. Add notes and slide numbers</p> <p>P4. Preview slides and run spell check before presentation</p> <p>P5. Print selected slides and submit presentation to appropriate person for feedback</p>

Knowledge and understanding

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

- K1.** Basic technical terminology to read help files and prompts
- K2.** Different types of:
 - formal and informal presentations
 - audience
- K3.** Effect of design and formatting on the readability and usability of presentations
- K4.** Presentation pitfalls
- K5.** Presentation effects for different audiences.

Critical Evidence(s) Required

A person who demonstrates competency in this unit must be able to provide evidence of the ability to presentations 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.

Entrepreneurial Skills

1- Investigate Micro Business Opportunities

Overview:

This competency describes the performance outcomes, skills and knowledge required to develop business ideas, and to investigate market needs and factors affecting potential markets.

Knowledge and understanding

The candidate must be able to demonstrate underpinning knowledge and understanding

Competency Unit	Performance Criteria
CU1. Describe business ideas	P1. Gather information for business ideas from appropriate sources. List details of business ideas and opportunities P2. Research alternative business ideas considering the resources available P3. Specify and list products and services to match business ideas P4. Identify and research potential customer information for business ideas P5. Identify and consider financial, business and technical skills available when researching business opportunities
CU2. Identify market needs	P1. Collect information regarding market size and potential from appropriate sources P2. Investigate market trends and developments to identify market needs relative to business ideas P3. Gather market information from primary and secondary sources to identify possible market needs in relation to business ideas P4. Identify ethical and cultural requirements of the market and their impact on business ideas P5. Identify new and emerging markets and document their features P6. Identify and organise information on expected market growth or decline and associated risk factors
CU3. Investigate factors affecting the market	P1. Identify projected changes in population, economic activity and the labour force that may affect business ideas P2. Identify movements in prices and projected changes in availability of resources P3. Review trends and developments and identify their potential impact on business ideas

required to carry out the tasks covered in this competency standard. This includes the knowledge of:

- K1.** Entrepreneurship.
- K2.** Concept of entrepreneurship
- K3.** Various types of enterprise that exist in the community

- K4.** Terms and elements involved in the concept of enterprise
- K5.** Appreciate that the advancement of individual and society in general when entrepreneurship is adopted
- K6.** Various motivational factors that entrepreneurs possess and utilize.
- K7.** Skills needed to assess and evaluate a risk
- K8.** Outline of small enterprise
- K9.** Creativity and innovation
- K10.** Techniques for developing creative abilities
- K11.** Resources of business idea
- K12.** Collective and creative thinking
- K13.** How to generate a business idea
- K14.** Techniques for identifying and assessing business opportunities.
- K15.** Various entrepreneurial characteristics
- K16.** Personal potential for becoming future entrepreneurs.
- K17.** Leadership qualities which are essential to the success of entrepreneurs
- K18.** Self- management skills and how they are important to be enterprising
- K19.** Rational approach to make personal and business decisions
- K20.** Steps for decision making and rating of decision-making skills
- K21.** Rules of negotiation for resolving business issues

Critical Evidence(s) Required

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

Evidence of the following is essential:

- Thorough investigation of business opportunities and ideas
- Clearly identified products/services and customer information for each business idea
- Thorough collection and analysis of market information and associated factors relating to business ideas
- Knowledge of ethical and cultural requirements.

2- Market products and services

Overview: This competency standard covers the skills and knowledge required to market products and services.

Competency Unit	Performance Criteria
CU1. Analyse market information	<p>P1. Identify, research and analyse existing or new markets for existing or new products or services using techniques to ensure reliable data</p> <p>P2. Analyse past trends and developments to determine market variability and associated risks</p> <p>P3. Develop gross margin budgets to account for market variability</p> <p>P4. Identify and evaluate competing products to determine strengths and weaknesses of own products</p> <p>P5. Monitor market environment to ensure information is current and reliable</p> <p>P6. Identify the legal, ethical and environmental constraints of the markets and their effect on the enterprise</p> <p>P7. Identify product specifications that suit market requirements and price advantage at the time</p> <p>P8. Present clear and concise information to the enterprise management team.</p>
CU2. Identify and evaluate factors to include in a marketing plan	<p>P1. Identify and evaluate production processes to ensure required product specifications are met</p> <p>P2. Identify and assess alternative selling strategies and techniques to identify marketing targets and methods</p> <p>P3. Identify and assess distribution channels and their role in your marketing strategies</p> <p>P4. Ensure the data used is reliable and the market environment and trends are substantiated</p> <p>P5. Evaluate the role of marketing professionals in providing advice</p>
CU3. Develop a marketing plan for your products and services	<p>P1. Establish marketing objectives based on current and potential product specifications</p> <p>P2. Select appropriate production processes to ensure product specifications are met</p> <p>P3. Select selling strategies to ensure required prices are achieved</p> <p>P4. Select appropriate distribution channel options to ensure access to target markets is achieved efficiently and appropriately</p> <p>P5. Establish timeframes for production, distribution and selling activities</p> <p>P6. Develop a gross margin budget to demonstrate the cost effectiveness of the marketing plan</p>

	7. Develop partial gross margin budgets to account for market variability
CU4. Determine promotional strategies	P1. Prepare and record detailed plans for promotional activities P2. Outline objectives, level of exposure and available markets P3. Ensure strategies take account of time management and scheduling issues, and resource constraints P4. Create promotional materials that enhance the product and commercial presentation P5. Record and communicate priorities, responsibilities, timelines and budgets for promotional activities.
CU5. Implement marketing activities	P1. Schedule planned marketing activities within appropriate timeframes P2. Develop measurable performance targets that meet business plan objectives P3. Organise distribution channels and ensure product and service information is accurate and readily available to clients P4. Implement marketing activities within budgetary constraints to meet legal, ethical and enterprise requirements
CU6. Evaluate marketing performance.	P1. Review the established marketing objectives to ensure they remain viable P2. Make an objective assessment of the marketing plan and its implementation by a comparison of valid and reliable data against the established objectives P3. Assess product, pricing and distribution policies in relation to market changes, marketing objectives and enterprise requirements P4. Identify areas of positive marketing performance and take corrective action to remedy poor marketing performance areas P5. Document and distribute information for continual analysis and effective planning management

Knowledge and understanding

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

- Describe the life cycle of product
- Identify the various ways of selecting suppliers,
- Explain the inventory management of stock, raw material and finished goods etc.
- Appreciate the importance of financial record keeping in a small business
- Explain techniques to keep cost as low as possible
- Develop balance sheet for a small enterprise
- Explain the operating cycle concept

- Explain the income tax computation procedure for a small business
- Explain the basic scheme of sales tax
- Explain the assessment procedure for returns and filling of returns.

Critical Evidence(s) Required

The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy holistically all the requirements of the performance criteria and required skills and knowledge and include achievement of the following:

- Marketable features of the product and potential markets
- Range of marketing alternatives
- Data to assess alternatives in a marketing plan
- Performance targets and recommend modifications or improvements
- Implement and evaluate a marketing plan
- Plan to manage promotional activities.

Soft Skills

1- Undertake Project Work

Overview:

This unit describes the skills and knowledge required to undertake a straightforward project or a section of a larger project. It covers developing a project plan, administering and monitoring the project, finalizing the project and reviewing the project to identify lessons learned for application to future projects. This unit applies to individuals who play a significant role in ensuring a project meets timelines, quality standards, budgetary limits and other requirements set for the project.

Unit Competency	Performance Criteria
CU1. Define project	P1. Access project scope and other relevant documentation P2. Define project stakeholders P3. Seek clarification from delegating authority of issues related to project and project parameters P4. Identify limits of own responsibility and reporting requirements P5. Clarify relationship of project to other projects and to the organization's objectives P6. Determine and access available resources to undertake project
CU2. Develop project plan	P1. Develop project plan in line with the project parameters P2. Identify and access appropriate project management tools P3. Formulate risk management plan for project, including Work Health and Safety (WHS) P4. Develop and approve project budget P5. Consult team members and take their views into account in planning the project P6. Finalize project plan and gain necessary approvals to commence project according to documented plan
CU3. Administer and monitor project	P1. Take action to ensure project team members are clear about their responsibilities and the project requirements P2. Provide support for project team members, especially with regard to specific needs, to ensure that the quality of the expected outcomes of the project and documented timelines are met P3. Establish and maintain required recordkeeping systems throughout the project P4. Implement and monitor plans for managing project finances, resources and quality P5. Complete and forward project reports as required to stakeholders P6. Undertake risk management as required to ensure project outcomes are met P7. Achieve project deliverables
CU4. Finalize	P1. Complete financial recordkeeping associated with project and

project	<p>check for accuracy</p> <p>P2. Ensure transition of staff involved in project to new roles or reassignment to previous roles</p> <p>P3. Complete project documentation and obtain necessary sign-off for concluding project</p>
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Knowledge and understanding

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

- K1.** Project management tools and how they contribute to a project
- K2.** Types of documents and other sources of information commonly used in defining the parameters of a project
- K3.** Processes for identifying and managing risk in a project
- K4.** Organization's mission, goals, objectives and operations and how the project relates to them

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 undertake project work. 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.