

National Competency Standards for
“Dies and Moulds Technology”
(Associate Engineer)
Level-5



**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 5, in (Dies and Mould Technology) "Associate Engineer"	

ENTRY REQUIREMENT

- For National Vocational Certificate Level-5 in Associate Engineer in Dies and Mould Technology, the entry requirement is award of National Vocational Certificate Level-4 in "CAD/CAM Supervisor".

QUALIFICATIONS DEVELOPMENT COMMITTEE

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

Sr. No.	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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1.	Mohammad Aasim	CO-Coordinator	Assistant Director NAVTTC, Islamabad	m.aasim.jamal@gmail.com	03335050713
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11.	Mr. Tariq Mehboob	Incharge Operational Wing	Representative PBTE	ranatariqm@gmail.com	03336704240
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13.	Mr. Fayaz Bashir	CEO	Dies and Moulds (Business)	(Absent)	03534502103
14.	Mr. Kamran Akhtar	Design Manager	Guard Filters, Lahore	(Absent)	03364455511
15.	Mr. Liaqat Ali Jamro	Director Academics	Representative of S-TEVTA,	(Absent)	03327950712

SUMMARY OF COMPETENCY STANDARDS

Dies and Mould Technology(Associate Engineer) Level-5								
Code	Competency Standards	Level	Theory		Practical		Total	
			C	Hr.	C	Hr.	C	Hr.
1.	CC-Design Moulds	5	8	80	12	120	20	200
2.	DD-Design Dies	5	4	40	6	60	10	100
3.	EE-Manufacture Die and Mould Components	5	12	120	18	180	30	300
4.	FF-Perform Dies & Moulds Assembly and Try outs	5	16	160	24	240	40	400
5.	G-Practice Professionalism	5	8	80	12	120	20	200
Total			48	480	72	720	120	1200

Qualification Packaging of Dies and Mould Technology

Regular Courses of Dies and Mould Technology (Level: 2-5)						
S #	Occupations	Competencies Standards	No of Modules	Level	Occupation Credit Hours	Training duration
1	"Machinist"	CS:1 to CS:11	11	2	60	6 Months
2	"CNC Machinist"	CS:12 to CS:18	7	3	60	6 Months
3	"CAD/CAM Supervisor"	CS:19 to CS:28	10	4	120	1 Year
4	"Associate Engineer in Dies and Mould Technology"	CS:29 to CS:33	5	5	120	1 Year

Occupation Packaging of Dies and Mould Technology

Short Courses						
S #	Occupations	Competencies Standards	No of Modules	Level	Occupation Credit Hours	Training duration
1.	Mechanical Draftsman	C11, C.17	2	2	20	3 Months
2.	Mould Designer	C.4, C11, C.17, C.26, C. 29	5	5	65	6 Months
3.	Die Designer	C.4, C11, C.17, C.26, C.30	5	5	55	5 Months
4.	EDM Machine Operator/Programmer	C.22, C23	2	4	30	3 Months
5.	Milling Machine Operator	C.10, C.16	2	3	22	2Months
6.	Bench Work & Welder	C.4, C.6, C.18	3	3	22	2 Months
7.	CNC Operator/Programmer	C.15, C.21	2	4	38	4 Months
8.	CAD/CAM Operator	C.26	1	4	20	2 Months

Competency Standard A: Design Moulds

Overview: This competency standard deal with learning the competencies needed to design moulds. That includes designing a blow mould, injection mould and die casting mould using appropriate CAD software. Your underpinning knowledge will be sufficient to provide you the basis for your work.

Competency Units	Performance Criteria
CU1. Design a Blow Mould using appropriate CAD software	<p>You must be able to:</p> <p>P1. Prepare a 3D Model for Blow Mould and detailed drawings of required workpiece</p> <p>P2. Prepare a conceptual Design of Blow Mould as per size of the machine</p> <p>P3. Prepare 3D part and assembly modelling of all components of blow mould according to conceptual design</p> <p>P4. Prepare 2D assembly drawings and detailed drawings of all components of blow mould</p> <p>P5. Prepare a Bill of Quantity (BOQ) of all components of Blow Mould as per final design</p>
CU2. Design an Injection Mould using appropriate CAD software	<p>You must be able to:</p> <p>P1. Prepare a 3D Model for Injection Mould and detailed drawings of required workpiece</p> <p>P2. Prepare a conceptual Design of Injection Mould as per size of the machine</p> <p>P3. Prepare 3D part and assembly modelling of all components of Injection mould according to conceptual design</p> <p>P4. Prepare 2D assembly drawings and detailed drawings of all components of Injection mould</p> <p>P5. Prepare a Bill of Quantity (BOQ) of all components of Injection Mould as per final design</p>
CU3. Design a Die Casting Mould using appropriate CAD software	<p>You must be able to:</p> <p>P1. Prepare a 3D Model for Die Casting and detailed drawings of required workpiece</p> <p>P2. Prepare a conceptual Design of Die Casting Mould as per size of the machine</p> <p>P3. Prepare 3D part and assembly modelling of all components of Die Casting according to conceptual design</p> <p>P4. Prepare 2D assembly drawings and detailed drawings of all components of Die Casting mould</p> <p>P5. Prepare a Bill of Quantity (BOQ) of all components of Die Casting Mould as per final design</p>
CU4. Design a Vacuum Mould using appropriate CAD software	<p>You must be able to:</p> <p>P1. Prepare a 3D Model for Vacuum Mould and detailed drawings of required workpiece</p> <p>P2. Prepare a conceptual Design of Vacuum Mould as per required product</p>

	<p>P3. Prepare 3D part and assembly modelling of all components of Vacuum Mould according to conceptual design</p> <p>P4. Prepare 2D assembly drawings and detailed drawings of all components of Vacuum Mould</p> <p>P5. Prepare a Bill of Quantity (BOQ) of all components of Vacuum Mould as per final design</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:

- Types of Moulding Materials
- Types of Mould Materials
- Basic structure of Mould
- Guide system
- Types of injection
- Types of Ejection
- Air vents
- Parting lines
- Mould Strength
- Cooling System
- Draft angles
- Moulding Machines

Critical Evidence(s) Required

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

- Design a Blow Mould using appropriate CAD software
- Design a Injection Mould using appropriate CAD software
- Design a Die Casting Mould using appropriate CAD software

Competency Standard B: Design Dies

Overview: This competency standard deal with learning the competencies needed to design dies. That includes designing piercing die, blanking die and forming die using appropriate CAD software. Your underpinning knowledge will be sufficient to provide you the basis for your work.

Competency Units	Performance Criteria
CU1. Design a Piercing Die using appropriate CAD software	<p><i>You must be able to:</i></p> <p>P1. Prepare a 3D Model for Piercing Die and detailed drawings of required workpiece</p> <p>P2. Prepare a conceptual Design of Piercing Die as per size of the press machine</p> <p>P3. Prepare 3D part and assembly modelling of all components of Piercing Die according to conceptual design</p> <p>P4. Prepare 2D assembly drawings and detailed drawings of all components of Piercing Die</p> <p>P5. Prepare a Bill of Quantity (BOQ) of all components of Piercing Die as per final design</p>
CU2. Design a Blanking Die using appropriate CAD software	<p><i>You must be able to:</i></p> <p>P1. Prepare a 3D Model for Blanking Die and detailed drawings of required workpiece</p> <p>P2. Prepare a conceptual Design of Blanking Die as per size of the press machine</p> <p>P3. Prepare 3D part and assembly modelling of all components of Blanking Die according to conceptual design</p> <p>P4. Prepare 2D assembly drawings and detailed drawings of all components of Blanking Die</p> <p>P5. Prepare a Bill of Quantity (BOQ) of all components of Blanking Die as per final design</p>
CU3. Design a Forming Die using appropriate CAD software	<p><i>You must be able to:</i></p> <p>P1. Prepare a 3D Model for Forming Die and detailed drawings of required workpiece</p> <p>P2. Prepare a conceptual Design of Forming Die as per size of the press machine</p> <p>P3. Prepare 3D part and assembly modelling of all components of Forming Die according to conceptual design</p> <p>P4. Prepare 2D assembly drawings and detailed drawings of all components of Forming Die</p> <p>P5. Prepare a Bill of Quantity (BOQ) of all components of Forming Die as per final design</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:

- Types of product Materials (Sheet Metal)
- Types of Die Materials
- Basic structure of Die Block
- Parting lines
- Die Strength
- Angular Clearance
- Press Machines

Critical Evidence(s) Required

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

- Design a Piercing Die using appropriate CAD software
- Design a Blanking Die using appropriate CAD software
- Design a Forming Die using appropriate CAD software

Competency Standard C: Manufacture Dies & Moulds

Overview: This competency standard deal with learning the competencies needed to manufacture Die and Mould. That includes operational planning. You can carry out machining operations of mould and die components. Your underpinning knowledge will be sufficient to provide you the basis for your work.

Competency Units	Performance Criteria
CU1. Perform Operational Planning	<i>You must be able to:</i> P1. Interpret engineering drawing of required part P2. Calculate sizes of material required for the work piece P3. Create a list of required tools P4. Allocate estimated time for each operation P5. Perform Sequencing of manufacturing process of each part
CU2. Carry out machining operations of mould components	<i>You must be able to:</i> P1. Manufacture all components of Mould as per process plan according to design requirements P2. Perform inspection of final parts and perform rectification accordingly
CU3. Carry out machining operations of die components	<i>You must be able to:</i> P1. Manufacture all components of Die as per process plan according to design requirements P2. Perform inspection of final parts and perform rectification accordingly

Knowledge & Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out the tasks covered in this competency standard. Therefore he/she must be able to:

- Project planning and Scheduling
- Progress Monitoring
- Time allocation for each process
- Presentation Skills

Critical Evidence(s) Required

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

- Manufacture a Mould according to design for the required product
- Manufacture a Die according to design for the required product

Competency Standard D: Perform Dies & Moulds Assembly and Try Out

Overview: This competency standard deal with learning the competencies needed to assembly and try out of Dies and Moulds. You can polishing/finishing and verify all functions of mould and die components. Your underpinning knowledge will be sufficient to provide you the basis for your work.

Competency Units	Performance Criteria
CU1. Perform Moulds Assembly and Try out	<i>You must be able to:</i> P1. Perform polishing/finishing of core cavities of Mould P2. Carry out final assembly of all mould components according to the assembly drawing P3. Verify all functions of mould P4. Perform try-outs of mould as required P5. Inspect final product before delivery
CU2. Perform Dies Assembly and Try out	<i>You must be able to:</i> P1. Perform finishing of Die and punch P2. Carry out final assembly of all Die components according to the assembly drawing P3. Verify all functions of Die and punch P4. Perform try-outs of Die and punch as required P5. Inspect final product before delivery

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:

- Use of measuring & inspection instruments
- Usage of all type of relevant machines
- Heat treatment processes
- Process of polishing
- Assembly sequence
- Spotting process
- Selection and use of Mould Polishing tools (Sand papers, stones, polishing compounds, paste, etc.)

Critical Evidence(s) Required

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

- Perform Dies & Moulds Assembly and Try out

Competency Standard E: Practice Professionalism

Overview:

This competency standard deal with learning the competencies needed to develop portfolio for industry. You can perform internship. Your underpinning knowledge will be sufficient to provide you the basis for your work.

Competency Units	Performance Criteria
CU1. Develop Portfolio for industry	P1. Select previous assignments for portfolio P2. Work on previous selected assignments for portfolio P3. Compile variety of assignments for portfolio P4. Make Professional Portfolio for industry P5. Develop Digital Portfolio for industry
CU2. Perform Internship	P1. Prepare for internship <ul style="list-style-type: none">• Personal Presentation• Portfolio Presentation• Interview preparation P2. Demonstrate Ethics for Internship P3. Identify Industry for internship P4. Perform Internship in Industry <ul style="list-style-type: none">• Fill the Performa of Internship• Report the performance of internship

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 portfolio
- Ethics for Internship

Critical Evidence(s) Required

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

- Professional
- Portfolio

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 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.

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

	and grammatical accuracy
CU5. Prepare documentation for publication	<p>P1. Check that the completed technical documentation meets client requirements and scope of work</p> <p>P2. Submit the technical documentation to appropriate person for approval</p> <p>P3. Prepare the technical documentation for publication and distribution using appropriate channels</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:

- Content features, such as clarity and readability
- Document design, web design and usability
- Functions and features of templates and style guides
- Instructional design principles
- Organizational policies, procedures and standards that cover document design.

Critical Evidence(s) Required

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

- 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.

2- 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.

Unit of Competency	Performance Criteria
CU1. Describe different types of social media tools and applications	P1. Explain characteristics of the term social media P2. Identify different types of social-media tools and applications P3. Illustrate some of the issues associated with the use of social media tools and applications
CU2. Compare different types of social media tools and applications	P1. Select one social media type for review P2. Review most popular tools and applications within that social media type P3. Itemize benefits across a range of the most popular tools and applications P4. Select most appropriate social media tool or application
CU3. Set up and use popular social media tools and applications	P1. Identify social media tools and applications for possible implementation P2. Initiate preferred social media tools and applications for use P3. Establish social media interface using text and file content P4. Initiate social networking interaction P5. Test and evaluate tools and applications for ease of use P6. Present findings

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:

- Basic technical terminology in relation to social networking and social media applications and tools
- Basic knowledge of uploading images, text files, pdf files, audio files, video files and link associated files
- Features and functions of social media applications
- Import and export software functions
- Linking documents
- OHS principles and responsibilities for ergonomics, including work periods and breaks
- Tagging to facilitate collaborative folk sonomy
- Social media applications and procedures for connecting to social networking sites

- Use of input and output devices
- 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.

Entrepreneurial Skills

1. Negotiate for resolving business issues

Overview:

This competency standard covers the skills and knowledge required to negotiate for resolving business issues

Competency Unit	Performance Criteria
CU1. Develop and implement issue resolution and grievance procedures	P1. Establish problem solving/issue resolution procedures within legislative requirements and organisation's guidelines. P2. Manage grievances and complaints in a timely and caring way to optimise likelihood of a favourable outcome for all parties and in line with organisational objectives and procedures. P3. Document and communicate individual's rights and obligations under industrial awards/agreements and legislation in a clear and concise manner and in appropriate language. P4. Conduct hearings, interviews and meetings within the principles of industrial democracy and participative, consultative processes. P5. Identify and invite all relevant industrial parties to participate in the resolution process.
CU2. Manage disciplinary matters	P1. Implement disciplinary matters in accordance with organisation's procedures. P2. Conduct investigations in a caring and confidential manner to maintain performance and morale. P3. Provide feedback promptly. P4. Institute appeals processes in accordance with organisational procedures. P5. Recognize and recommend deficiencies in procedures for changes made

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:

- Legislation
- Organizational behaviour
- Problem solving Technique
- Identify reason of conflict

Critical Evidence(s) Required

The candidate needs to produce following critical evidences in order to be competent in this competency standard.

- Solve any issue occurred.

2. Develop Entrepreneurial Skills

Overview:

This Competency Standard identifies the competencies required to develop entrepreneurial skills by Mosaic Artist, in accordance with the organization's approved guidelines and procedures. You will be expected to develop a business plan, collect information regarding funding sources, develop a marketing plan and develop basic business communication skills. Your underpinning knowledge regarding entrepreneurial skills will be enough to provide you the basis for your work.

Unit of Competency	Performance Criteria
CU1. Develop a business plan	<p>P1. Conduct a market survey to collect following information</p> <ul style="list-style-type: none"> • Customer /demand • Tools, equipment, machinery and furniture with rates • Raw material • Supplier • Credit / funding sources • Marketing strategy • Market trends • Overall expenses • Profit margin <p>P2. Select the best option in terms of cost, service, quality, sales, profit margin, overall expenses</p> <p>P3. Compile the information collected through the market survey, in the business plan format</p>
CU2. Collect information regarding funding sources	<p>P1. Identify the available funding sources based on their terms and conditions, maximum loan limit, payback time, interest rate</p> <p>P2. Choose the best available option according to investment requirement</p> <p>P3. Prepare documents according to the loan agreement requirement</p> <p>P4. Include the information of funding sources in the business plan</p>
CU3. Develop a marketing plan	<p>P1. Make a marketing plan for the business including product, price, placement, promotion, people, packaging and positioning</p> <p>P2. Include the information of marketing plan in the business plan</p>
CU4. Develop basic business communication skills	<p>P1. Communicate with internal customers e.g.: labor, partners and external customers e.g.: suppliers, customers etc., using effective communication skills</p> <p>P2. Use different modes of communication to communicate internally and externally e.g.: presentation, speaking, writing, listening, visual representation, reading etc.</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:

- 7Ps of marketing including product, price, placement, promotion, people, packaging and positioning
- 7Cs of business communication
- Different modes of communication and their application in the industry
- Specific business terms used in the industry
- Enlist the available funding sources
- Explain how to get loan to start a new business
- Explain market survey and its tools e.g.: questionnaire, interview, observation etc.
- Market trends for specific product offering
- Main elements of business plan
- How to fill the business plan format?

Critical Evidence(s) Required

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

- List 7 Ps
- List 7Cs