Model Curriculum

QP Name: Tool and Die Maker

QP Code: CSC/Q0306

QP Version: 2.0

NSQF Level: 5

Model Curriculum Version: 2.0

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Table of Contents

Training Parameters

Sector	Capital Goods
Sub-Sector	1. Machine Tools 2. Dies, Moulds and Press Tools 3. Plastics Manufacturing Machinery 4. Textile Manufacturing Machinery 5. Process Plant Machinery 6. Electrical and Power Machinery 7. Light Engineering Goods
Occupation	Fitting and Assembly
Country	India
NSQF Level	5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7222.050
Minimum Educational Qualification and Experience	12th Pass + ITI Fitter or Machinist with 2 years of relevant experience Or 12th Pass with 4 years of experience Or CNC programmer – Level - 4 with 2 years of relevant experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 years
Last Reviewed On	31/03/2022
Next Review Date	31/03/2025
NSQC Approval Date	31/03/2022
QP Version	2.0
Model Curriculum Creation Date	31/03/2022
Model Curriculum Valid Up to Date	31/03/2025
Model Curriculum Version	2.0
Minimum Duration of the Course	720 Hours 00 Minutes
Maximum Duration of the Course	720 Hours 00 Minutes

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills.

- Interpret assembly drawing/work instructions/SOPs for identification of raw material, tools and equipment required for the tool and die manufacturing operations.
- Carry out preparatory activities such as lifting of workpiece, inspection of tools and equipment etc.
- Carry out machining, assembling and post-production operations.
- Work effectively and efficiently as per schedules and timelines.
- Implement safety practices.
- Optimize the use of resources to ensure less wastage and maximum conservation.

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
Bridge Module					
Module 1: Introduction to the role of a Tool and Die Maker	8:00	0:00	0:00	00:00	8:00
CSC/N1335 – Follow the health and safety practices at work NOS Version- 2.0 NSQF Level- 3	**20:00**	**40:00**	**0:00**	**0:00**	**60:00**
Module 2: Health and safety practices	20:00	40:00	0:00	00:00	60:00
CSC/N1336 – Coordinate with co-workers to achieve work efficiency NOS Version-2.0 NSQF Level- 3	**20:00**	**30:00**	**0:00**	**00:00**	**50:00**
Module 3: Process of coordinating with co-workers to achieve work efficiency	20:00	30:00	0:00	00:00	50:00
CSC/N0307 – Prepare for the making of tools and die NOS Version No. – 2.0 NSQF Level – 5	**42:00**	**80:00**	**0:00**	**00:00**	**122:00**
Module 4: Prepare for tool and die manufacturing operations	42:00	80:00	0:00	00:00	122:00
CSC/N0316 – Perform machining operations NOS Version No. – 2.0 NSQF Level – 5	**40:00**	**120:00**	**0:00**	**00:00**	**160:00**

Module 5: Perform fitting and assembly operations	40:00	120:00	0:00	00:00	160:00
CSC/N0308 – Perform fitting operations NOS Version No. – 2.0 NSQF Level – 5	**40:00**	**120:00**	**0:00**	**00:00**	**160:00**
Module 4: Prepare for tool and die manufacturing operations	40:00	120:00	0:00	00:00	160:00
CSC/N0309 – Perform assembly operations NOS Version No. – 2.0 NSQF Level – 5	**40:00**	**120:00**	**0:00**	**00:00**	**160:00**
Module 4: Prepare for tool and die manufacturing operations	40:00	120:00	0:00	00:00	160:00
Total Duration	**210:00**	**510:00**	**0:00**	**00:00**	**720:00**

Module Details

Module 1: Introduction to the role of a Tool and Die Maker

Bridge module

Terminal Outcomes:

- Discuss the role and responsibilities of a Tool and Die Maker.

Duration: 08:00	Duration: 00:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• List the role and responsibilities of a Tool and Die Maker. • Discuss the job opportunities of a Tool and Die Maker. • Describe the size and scope of the capital good industry and its sub-sectors. • Explain about Indian capital goods manufacturing market. • Discuss the standards and procedures involved in the different operations of machining and assembly work.	
Classroom Aids:	
Whiteboard, marker pen, projector, standard checklists and schedules	
Tools, Equipment and Other Requirements	

Module 2: Health and safety Practices

Mapped to CSC/N1335 v2.0

Terminal Outcomes:

- Demonstrate ways to maintain personal health and safety.
- Describe the process of assisting in hazard management.
- Explain how to check the first aid box, firefighting and safety equipment.
- Describe the process of assisting in waste management.
- Explain the importance of following the fire safety guidelines.
- Explain the importance of following the emergency and first-aid procedures.
- Demonstrate the process of carrying out relevant documentation and review.

Duration: 20:00	Duration: 40:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the recommended practices to be followed to ensure protection from infections and transmission to others, such as the use of hand sanitiser and face mask. • Explain the importance and process of checking the work conditions, assessing the potential health and safety risks, and take appropriate measures to mitigate them. • Explain the importance and process of selecting and using the appropriate PPE relevant to the task and work conditions. • Explain the recommended techniques to be followed while lifting and moving heavy objects to avoid injury. • Explain the importance of following the manufacturer's instructions and workplace safety guidelines while working on heavy machinery, tools and equipment. • Explain the importance and process of identifying existing and potential hazards at work. • Describe the process of assessing the potential risks and injuries associated with the various hazards. • Explain how to prevent or minimise different types of hazards. • Explain how to handle and store hazardous materials safely. • Explain the importance of ensuring the first aid box is updated with the relevant first aid supplies. • Describe the process of checking and testing the firefighting and various safety equipment to ensure they are in a usable	• Demonstrate the use of appropriate Personal Protective Equipment (PPE) relevant to the task and work conditions. • Demonstrate how to handle hazardous materials safely. • Demonstrate the process of testing the firefighting and various safety equipment to ensure they are in usable condition. • Demonstrate the process of recycling and disposing different types of waste appropriately. • Demonstrate how to use the appropriate type of fire extinguisher to extinguish different types of fires safely. • Demonstrate how to administer appropriate first aid to the injured personnel. • Demonstrate the process of performing Cardiopulmonary Resuscitation (CPR) on a potential victim of cardiac arrest. • Demonstrate the process of carrying out appropriate documentation following a health and safety incident at work, including all the required information.

condition. • Explain the criteria for segregating waste into appropriate categories. • Describe the appropriate methods for recycling recyclable waste. • Describe the process of disposing of the non-recyclable waste safely and the applicable regulations. • Explain the use of different types of fire extinguishers to extinguish different types of fires. • State the recommended practices to be followed for a safe rescue during a fire emergency. • Explain how to request assistance from the fire department to extinguish a serious fire. • Explain the appropriate practices to be followed during workplace emergencies to ensure safety and minimise loss to organisational property. • State the common health and safety hazards present in a work environment, associated risks, and how to mitigate them. • State the safe working practices to be followed while working at various hazardous sites and using electrical equipment. • Explain the importance of ensuring easy access to firefighting and safety equipment. • Explain the appropriate preventative and remedial actions to be taken in the case of exposure to toxic materials, such as poisonous chemicals and gases. • Explain various causes of fire in different work environments and the recommended precautions to be taken to prevent fire accidents. • Describe different methods of extinguishing fire. • List different materials used for extinguishing fire. • Explain the applicable rescue techniques to be followed during a fire emergency. • Explain the importance of placing safety signs and instructions at strategic locations in a workplace and following them. • Explain different types of first aid treatment to be provided for different	

types of injuries. • State the potential injuries associated with incorrect manual handling. • Explain how to move an injured person safely. • State various hazards associated with the use of various machinery, tools, implements, equipment and materials. • Explain the importance of ensuring no obstruction and free access to fire exits. • Explain how to free a person from electrocution safely. • Explain how to administer appropriate first aid to an injured person. • Explain how to perform Cardiopulmonary Resuscitation (CPR). • Explain the importance of coordinating with the emergency services to request urgent medical assistance for persons requiring professional medical attention or hospitalisation. • State the appropriate documentation to be carried out following a health and safety incident at work, and the relevant information to be included. • Explain the importance and process of reviewing the health and safety conditions at work regularly or following an incident. • Explain the importance and process of implementing appropriate changes to improve the health and safety conditions at work.	
Classroom Aids	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements	
Personal Protective Equipment, Cleaning Equipment and Materials, Sanitizer, Soap, Mask	

Module 3: Process of coordinating with co-workers to achieve work efficiency

Mapped to CSC/N1336 v2.0

Terminal Outcomes:

- Demonstrate ways to work and communicate effectively with co-workers.
- Discuss ways to promote diversity and inclusion at the workplace.

Duration: 20:00	Duration: 30:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the importance and process of effective communication in the workplace. • Explain the barriers to effective communication and how to overcome them. • Explain the importance of teamwork in an organisation's and individual's success. • Explain the importance of active listening in the work environment. • State the appropriate techniques to be followed for active listening. • Explain the importance of tone and pitch ineffective communication. • Explain the importance of avoiding casual expletives and unpleasant terms while communicating professional circles. • Explain the importance of maintaining discipline and ethical behaviour at work. • State the common reasons for interpersonal conflict and how to resolve them. • Explain the importance of developing effective working relationships for professional success. • Describe the process of expressing and addressing grievances appropriately and effectively. • Explain the importance and process of planning daily tasks to ensure their timely completion and efficient use of time. • Explain the importance of adhering to the limits of authority at work. • Explain the importance of following the applicable quality standards and timescales at work. • Explain the importance of coordinating with co-workers to achieve the work objectives efficiently. • Explain the relevant documentation requirements.	• Demonstrate the process of preparing the relevant documents and reports as per the supervisor's instructions, providing appropriate information clearly and systematically. • Demonstrate how to mentor and assist subordinates in the execution of their work responsibilities. • Demonstrate the process of using various resources efficiently to ensure maximum utilisation and minimum wastage. • Demonstrate how to communicate clearly and politely to ensure effective communication with co-workers. • Demonstrate appropriate verbal and non-verbal communication that is respectful of genders and disability.

• Explain the importance of providing appropriate information clearly and systematically in work documents. • State the escalation matrix to be followed to deal with out of authority tasks and concerns. • Explain the importance and process of mentoring and assisting subordinates in the execution of their work responsibilities. • Explain how to identify possible disruptions to work prevent them. • Explain how to use various resources efficiently to ensure maximum utilisation and minimum wastage. • Explain the recommended practices to be followed at work to avoid and resolve conflicts at work. • Explain the importance and process of efficient and timely dissemination of information to the authorised personnel. • Explain the procedure to report inappropriate behaviour e.g., harassment.	
Classroom Aids:	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
NA	

Module 4: Prepare for tool and die manufacturing operations

Mapped to CSC/N0307, v2.0

Terminal Outcomes:

- Identify tools and equipment required for tool and die manufacturing operations.
- Perform the steps to carry out preparatory activities such as lifting of workpiece, collection and inspection of tools and equipment etc.

Duration: 42:00	Duration: 80:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe basic process followed for tool and die manufacturing. • Discuss the information derived from the engineering drawings, work order, SOPs and instructions from supervisor. • List the input material, tools, equipment, machines and consumables required during tool and die manufacturing work. • Describe the selection criteria of input material, tools, equipment, machines and consumables required for tool and die manufacturing work. • Discuss the organisational process of collecting and arranging the input material, tools, equipment, machines and consumables from the store. • Summarise the steps to be performed for checking the input material, tools, equipment, machines and consumables before use. • Discuss various assembling and machining parameters and their impact on output. • Discuss the necessary precautions to avoid any hazard and accident during tool and die manufacturing activities.	• Read the drawing and work orders for identifying work requirements, selecting and planning sequence of assembling and machining operations. • Demonstrate the standard operating procedure to use tools, equipment, machines and consumables required during tool and die manufacturing work. • Show how to select and arrange the required input material, tools, equipment, machines and consumables from the store. • Apply appropriate ways to check the input material, tools, equipment, machines and consumables before use. • Show how to calibrate the tool and equipment before use. • Apply appropriate ways to check that machines and equipment are clean and free from dust and unwanted material. • Show how to set the assembling and machining equipment and their parameters as per the work instructions.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	
• PPT's, teaching aids, drawing / blue print, work order • **Raw Materials:** Metal blocks • Work Table With Bench Vice • **Machining tools/ equipment**: Surface marking plate, cutting tools, threading, dies & guides, etc. • **Machines:** Conventional lathe and vertical milling machine with standard accessories and Production CNC machining center with ATC • **Measuring equipment**: Vernier calipers, micrometre, feeler gauges, bore gauge, slip gauge, thickness gauge, steel ruler, measuring tape, height, gauge, dial gauge, angle plate, set square compass, divider, scriber, T Square, bevel protractor, pin set, torque meter etc. • **Consumables:** Oil stones, Emery, Dressing stone, File cord, Tool post packing, Spares for	

cutting tools, Carbide inserts, Grinding Wheels etc.

- **Assembly tools and equipment:** Riveting machine, drilling machine, riveting guns, pneumatic guns, fasteners, rubber seals, soldering iron, jigs, fixtures, adhesives
- **Components:** Bolts, nuts, screws, wires, fasteners, connectors, sealants, adhesive bonding material etc.
- **Lifting devices:** Hoists, cranes, bins, part trolleys, pallet trucks
- **Hand book**, job orders, work order, completion material requests, and Technical Reference Books.
- **Safety materials**: Fire extinguisher, portable welding curtains, leather safety gloves, leather aprons, safety glasses, helmet, safety shoe and first-aid kit
- **Cleaning material**: Wire brush (M.S.), cleaning agents, cleaning cloth, waste container, dust pan and brush set, liquid soap, hand towel

Module 5: Perform machining operations

Mapped to CSC/N0316, v2.0

Terminal Outcomes:

- Identify tools and equipment required for machining work.
- Perform machining activities such as turning, milling, grinding, drilling etc.

Duration: 40:00	Duration: 120:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain different types of machining processes. • Discuss operational fundamentals of conventional and CNC machine. • List jigs and fixtures, tools, cutting tools, equipment and measuring instruments required during the machining work. • Discuss the process of lifting and placing the workpieces on working platform as per the work instructions. • Elaborate ways for cutting the workpieces as per the work requirement. • Discuss effect of oil, grease, scale or dirt on the machining process. • Describe importance of selecting correct program in the CNC machine for machining operation as per the work instructions. • Discuss how to cut, shape and trim the workpiece by using CNC machine. • Discuss the importance of monitoring process parameters during the machining process and correcting them as per the requirements. • List the steps to be performed for checking the machine operations for any defects in its component and informing the supervisor. • Discuss post machining processes like inspection, cleaning, maintenance etc. • Explain methods of inspecting the quality of machined workpieces. • List the commonly occurring defects and their remedies in the machined workpieces. • Discuss the process of segregating, tagging and storing of damaged and ok workpieces as per organisational guidelines. • List different methods for disposing off waste material and scrap.	• Show how to plan machining operations for tools & die manufacturing on the basis of drawing/blue print. • Apply appropriate ways to fix cutters or cutting tools in the CNC or conventional machines required for various machining operations. • Apply appropriate ways to measure and mark the reference points/ cutting lines on the work pieces by using measuring instruments. • Perform the steps of lifting and placing the workpieces on working platform by using lifting tools. • Demonstrate use of power operated/ manual/ automatic cutting tools to cut the workpieces as per the work requirement. • Demonstrate organisational specified procedure of rough machining to get required size of work piece. • Demonstrate organizational specified procedure of performing machining operations on the workpiece. • Apply appropriate ways to cut, shape and trim the workpiece to achieve specified lengths and shapes. • Read the measurement gauges and monitor the process parameters to maintain the quality standards. • Employ appropriate ways for checking the machine operations for any defects in the component. • Prepare a sample report about any problems faced during the machining process. • Employ appropriate ways of measuring and comparing the final workpiece dimensions with the specified dimensions in the work order and engineering drawing. • Show how to shut down the machine and

• Discuss the necessary precautions to avoid any hazard and accident during machining activities.	remove the workpiece after completion of machining activities. • Demonstrate appropriate inspection method to check the quality of machined workpieces. • Demonstrate procedure to segregate, tag and store machined pieces as per organisational guidelines. • Demonstrate organisational procedure of cleaning and storing all the tools, machine and equipment after completion of work. • Employ appropriate ways for checking the machine operations for any defects in the component. • Show how to dispose waste as per organisational guidelines. • Perform steps to report to the supervisor about any problems faced or anticipated during the complete process.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	
• Basic tool box, Work bench with vice • Lathe Machines, Cutting tools measuring tools, Hand Tools, Power tools, Drawing Tools, Drilling Machines, Cutting Machines, Hand Grinders, GD&T, etc. • Hand book, job orders, work order, completion material requests, and Technical Reference Books. • **Safety materials**: Fire extinguisher, welding helmet, Leather sleeves, leather safety gloves, leather aprons, safety glasses with side shields, ear plug, safety shoes and first-aid kit • **Cleaning material**: Tip cleaner, wire brush (M.S.), cleaning agents, cleaning cloth, waste container, dust pan and brush set, liquid soap, hand towel	

Module 6: Perform fitting operations

Mapped to CSC/N0308, v2.0

Terminal Outcomes:

- Perform fitting operations for manufacturing tool and die.
- Perform post-fitting operations.

Duration: 40:00	Duration: 120:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• List the tools, measuring instruments, fittings, components/parts and sub-assemblies required for fitting operations. • Describe the precautions to be taken and safe practices to be followed while performing various fitting operations required in the job. • Describe various fitting operations and methods. • Elucidate the factors for selecting the method of fitting as per the work requirements. • Describe marking out process and various marking out methods. • Explain the safety requirements to be followed throughout the work process. • Discuss the process of lifting and placing the components on the designated place. • State the impact of inaccurate alignment, adjustment and levelling on the equipment performance. • Explain methods of inspecting the quality of fitted components. • List the commonly occurring defects and their remedies in the fitted components. • List the types of information to be recorded while performing components with various features as per standards applicable to the process operations. • State the importance of disposing the waste, scrap etc. after task completion.	• Select the appropriate fitting processes on the basis of information derived from workorder, engineering drawings etc. • Show how to mark the dimensions, range of features and templates on the equipment body. • Apply appropriate ways to trace/transfer the specified features from the templates onto the workpieces. • Show how to plan the fitting activities on the basis of drawing, job order etc. • Perform the steps of placing components on the designated place by using lifting tools. • Employ appropriate practices to align, adjust and level the components for fitting and assembly. • Demonstrate the procedure to carry out fitting operations such as threading, drilling, filing, etc. • Employ appropriate fitting method to fit the components as per drawing. • Demonstrate appropriate inspection method to check the quality of fitted components. • Employ appropriate ways to check the irregularities in specifications of the component. • Employ appropriate practices to clean and store the tools, equipment and process auxiliaries safely. • Prepare sample records consisting of information such as the type of tasks performed. • Demonstrate the procedure of disposing the waste generated and unwanted materials safely.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

- Basic tool box, Work bench with vice
- Lathe Machines, Cutting tools measuring tools, Hand Tools, Power tools, Drawing Tools, Drilling Machines, Cutting Machines, Hand Grinders, GD&T, etc.
- Hand book, job orders, work order, completion material requests, and Technical Reference Books.
- **Safety materials**: Fire extinguisher, welding helmet, Leather sleeves, leather safety gloves, leather aprons, safety glasses with side shields, ear plug, safety shoes and first-aid kit
- **Cleaning material**: Tip cleaner, wire brush (M.S.), cleaning agents, cleaning cloth, waste container, dust pan and brush set, liquid soap, hand towel

Module 7: Perform assembly operations

Mapped to CSC/N0309, v2.0

Terminal Outcomes:

- Perform assembly of components to manufacture tool and die.
- Perform post-assembly operations.

Duration: 40:00	Duration: 120:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• List the tools, measuring instruments, fittings, components/parts and sub-assemblies required for assembling work. • Describe the precautions to be taken and safe practices to be followed while performing various assembling operations required in the job. • Describe various assembly operations such as bolting, torquing, tightening, fastening, greasing, hammering, sealing, clamping, etc. • Elucidate the factors for selecting the method of assembly as per the work requirements. • Discuss the process of lifting and placing the auto component on the designated place. • Explain methods of inspecting the quality of assembled components. • List the commonly occurring defects and their remedies in the assembled components. • List the types of information to be recorded while performing components with various features as per standards applicable to the process operations. • State the importance of disposing the waste, scrap etc. after task completion.	• Select the appropriate assembling processes on the basis of information derived from workorder and engineering drawings. • Show how to arrange the tools, measuring instruments, equipment, components/ parts and sub-assemblies used in the work process. • Show how to plan the assembling activities on the basis of drawing, job order etc. • Apply appropriate ways to compare measurements to drawings and sketches to ensure conformity, fits and clearances. • Display the procedure of setting up the equipment required for assembling work. • Perform the steps of placing component on the designated place by using lifting tools. • Demonstrate the procedure to carry out assembly operations such as torquing, joining, fastening etc. • Employ appropriate assembly method for assembling of mechanical components. • Apply standard techniques to fasten components permanently. • Show how to dismantle mechanical assemblies without damage to components and/or subassemblies. • Demonstrate appropriate inspection method to check the quality of assembled components. • Employ appropriate ways to check the irregularities in specifications of the component. • Employ appropriate practices to clean and store the tools, equipment and process auxiliaries safely. • Prepare sample records consisting of information such as the type of tasks performed.

	• Demonstrate the procedure of disposing the waste generated and unwanted materials safely.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	
• Basic tool box, Work bench with vice • Lathe Machines, Cutting tools measuring tools, Hand Tools, Power tools, Drawing Tools, Drilling Machines, Cutting Machines, Hand Grinders, GD&T, etc. • Hand book, job orders, work order, completion material requests, and Technical Reference Books. • **Safety materials**: Fire extinguisher, welding helmet, Leather sleeves, leather safety gloves, leather aprons, safety glasses with side shields, ear plug, safety shoes and first-aid kit • **Cleaning material**: Tip cleaner, wire brush (M.S.), cleaning agents, cleaning cloth, waste container, dust pan and brush set, liquid soap, hand towel	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Diploma	Mechanical	5	Tool and die manufacturing	2	Tool and die manufacturing	NA
B.E/B.Tech	Mechanical	3	Tool and die manufacturing	1	Tool and die manufacturing	NA

Trainer Certification	
Domain Certification	**Platform Certification**
"Tool and Die Maker, CSC/Q0306, version 2.0". Minimum accepted score is 80%.	"Trainer, MEP/Q2601 v1.0" Minimum accepted score is 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training/Assessment Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Diploma	Mechanical	5	Tool and die manufacturing	2	Tool and die manufacturing	NA
B.E/B.Tech	Mechanical	3	Tool and die manufacturing	1	Tool and die manufacturing	NA

Assessor Certification	
Domain Certification	**Platform Certification**
"Tool and Die Maker, CSC/Q0306, version 2.0". Minimum accepted score is 80%.	"Assessor; MEP/Q2701 v1.0" Minimum accepted score is 80%.

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Assessment Strategy

1. Assessment System Overview:
    - Batches assigned to the assessment agencies for conducting the assessment on SDMS/SIP or email
    - Assessment agencies send the assessment confirmation to VTP/TC looping SSC
    - Assessment agency deploys the ToA certified Assessor for executing the assessment
    - SSC monitors the assessment process & records

2. Testing Environment:
    - Confirm that the centre is available at the same address as mentioned on SDMS or SIP
    - Check the duration of the training.
    - Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
    - If the batch size is more than 30, then there should be 2 Assessors.
    - Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
    - Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
    - Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
    - Check the availability of the Lab Equipment for the particular Job Role.

3. Assessment Quality Assurance levels / Framework:
    - Question papers created by the Subject Matter Experts (SME)
    - Question papers created by the SME verified by the other subject Matter Experts
    - Questions are mapped with NOS and PC
    - Question papers are prepared considering that level 1 to 3 are for the unskilled & semi-skilled individuals, and level 4 and above are for the skilled, supervisor & higher management
    - Assessor must be ToA certified & trainer must be ToT Certified
    - Assessment agency must follow the assessment guidelines to conduct the assessment

4. Types of evidence or evidence-gathering protocol:
    - Time-stamped & geotagged reporting of the assessor from assessment location
    - Centre photographs with signboards and scheme specific branding
    - Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
    - Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos

5. Method of verification or validation:
    - Surprise visit to the assessment location
    - Random audit of the batch
    - Random audit of any candidate

6. Method for assessment documentation, archiving, and access
    - Hard copies of the documents are stored
    - Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage
    - Soft copies of the documents & photographs of the assessment are stored in the Hard Drives

References

Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psychomotor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
SOP	Standard Operating Procedure
WI	Work Instructions
PPE	Personal Protective equipment