

# Model Curriculum

## Machining and Quality Technician

**SECTOR:** AUTOMOTIVE  
**SUB-SECTOR:** Manufacturing  
**OCCUPATION:** Machining  
**REF ID:** ASC/Q3509  
**NSQF LEVEL:** 3



## Certificate

### CURRICULUM COMPLIANCE TO QUALIFICATION PACK - NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the  
AUTOMOTIVE SKILLS DEVELOPMENT COUNCIL  
for

#### MODEL CURRICULUM

Complying to National Occupational Standards of

Job Role/Qualification Pack: 'Machining and Quality Technician' QP No. 'ASC/Q3509 NSQF Level 3'

Date of Issuance: April 9<sup>th</sup>, 2016  
Valid up to\*: April 10<sup>th</sup>, 2018

\*Valid up to the next review date of the Qualification Pack or the  
'Valid up to' date mentioned above (whichever is earlier)

  
**Sunil K. Chaturvedi**  
Chief Executive Officer, ASDC

## TABLE OF CONTENTS

<b>1. Curriculum</b>	<b>05</b>
<b>2. Annexure1: Assessment Criteria</b>	<b>15</b>
<b>3. Annexure2: Trainer Prerequisites</b>	<b>14</b>

# Machining and Quality Technician

## CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Machining and Quality Technician”, in the “Automotive” Sector/Industry and aims at building the following key competencies amongst the learner

<b>Program Name</b>	<b>Machining and Quality Technician</b>		
<b>Qualification Pack Name &amp; Reference ID. ID</b>	ASC/Q3509		
<b>Version No.</b>	1.0	<b>Version Update Date</b>	
<b>Pre-requisites to Training</b>	Class X / ITI in Mechanical/Electrical		
<b>Training Outcomes</b>	<p><b>After completing this programme, participants will be able to:</b></p> <ul style="list-style-type: none"> <li>• Understand the component requirements and the equipment to be used</li> <li>• Set up the machine as per the work instructions/ guidance from the machinist/Supervisor</li> <li>• Support the machinist/ operator/supervisor in various kinds of machining operations</li> <li>• Record the observations during the process</li> <li>• Perform minor machine maintenance activities</li> <li>• Perform de- burring activity on the machined components</li> <li>• Assist the operator in the tool change process</li> <li>• Perform complete dimensional, layout inspection and visual check as per product drawing</li> <li>• Document the observations in the inspection check sheet</li> <li>• Handle inspection equipment and instruments such as Vernier Micrometer, height gauge and air gauges and similar other items</li> <li>• carry out dock audit consisting of visual, labelling and packaging checks</li> <li>• Create and sustain a safe , clean and environment friendly workplace</li> <li>• Identified activities which can cause potential injury through sharp objects , gas leakage, burns poisons fumes etc.</li> <li>• Ensure sorting, streamlining and organizing, storage and documentation, cleaning, standardization and sustenance across the plant and office premises of the organization</li> </ul>		

This course encompasses 6 out of 6 National Occupational Standards (NOS) of “Machining and Quality Technician” Qualification Pack issued by “Automotive skill Development Council”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1.	<p><b>Introduction</b></p> <p><b>Theory Duration</b> (hh:mm) 08.00</p> <p><b>Practical Duration</b> (hh:mm) 00.00</p> <p><b>Corresponding NOS Code</b> NIL</p>	<ul style="list-style-type: none"> <li>• General Discipline in the class room</li> <li>• General Safety Rules</li> <li>• Introduction to Automotive Industry</li> <li>• Familiarization about various auto manufacturers</li> <li>• Familiarization of terms associated with the sector</li> <li>• Brief outline about the course</li> <li>• Job Opportunities for Machining and Quality Technician</li> <li>• Career growth path for an Machining Technician</li> </ul>	<ul style="list-style-type: none"> <li>• Teaching Aids: Charts, CBTs, Videos, White board Markers, White board / Flip charts.</li> <li>• Handouts of syllabus/course curriculum</li> </ul>
2.	<p><b>Assist in Carrying out pre-machining activities</b></p> <p><b>Theory Duration</b> (hh:mm) 30.00</p> <p><b>Practical Duration</b> (hh:mm) 55.00</p> <p><b>Corresponding NOS Code</b> ASC/N3504</p>	<ul style="list-style-type: none"> <li>• Understanding the component requirements and the equipment to be used</li> <li>• Understanding the does and don'ts of the manufacturing process as defined in SOPs/ Work Instructions or defined by supervisors</li> <li>• Understanding the tooling instructions as specified in the Operating Manual/ Work Instructions or Standard Operating Procedures</li> <li>• Selection of proper coolant and lubricant required for machining the required component</li> </ul>	<ul style="list-style-type: none"> <li>• Teaching Aids: Charts, CBTs, Videos, White board Markers, White board / Flip charts.</li> <li>• Basic Tool Box Machining Technician</li> <li>• Machining Tools/ equipment: Surface marking plate, cutting tools, threading, dies &amp; guides, etc. Conventional lathe with Standard accessories</li> <li>• Vertical Milling machine with standard accessories</li> <li>• Bench Drilling machine with standard accessories</li> <li>• Bench grinder</li> <li>• Work bench with vice</li> <li>• Production CNC lathe</li> <li>• Production CNC machining centre with ATC</li> <li>• Compressor, stabilisers</li> <li>• 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, calipers etc.</li> <li>• Coolant, oils and lubricants used</li> <li>• Operating Manual</li> <li>• Personal Protection Equipment: Gloves,</li> </ul>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
			<p>Safety Shoes, goggles, ear plugs,</p> <ul style="list-style-type: none"> <li>• Workshop Safety: Fire extinguishers</li> <li>• First Aid</li> <li>• Safety signs</li> <li>• SOP Charts on safety norms and drills</li> <li>• Charts of dos and Don'ts in work area.</li> <li>• Sample work pieces: Automotive casting, Forged parts, Powder coating part, Welded parts, Sub assembly parts</li> <li>• Sample of machined parts</li> <li>• Machine drawing Handbooks</li> <li>• Consumables: Oil stones, Emery, Dressing stone, File cord, Tool post packing, Spares for cutting tools, Carbide inserts, Grinding Wheels etc.</li> <li>• Hand book, job orders, work order, completion material requests, and Technical Reference Books.</li> </ul>
3.	<p><b>Support the operator in performing machining operations</b></p> <p><b>Theory Duration</b> (hh:mm) 45.00</p> <p><b>Practical Duration</b> (hh:mm) 80.00</p> <p><b>Corresponding NOS Code</b> ASC/N3505</p>	<ul style="list-style-type: none"> <li>• Set-up, adjust machine tools in order to perform machining operations and keep dimension within the specified tolerance limit</li> <li>• Support the operator in aligning and securely holding fixtures, cutting tools etc. onto the machine</li> <li>• Support in selecting cutting tools and tooling instructions as per the work instructions / supervisor 's instructions</li> <li>• Observe machine operations to detect defects in the component manufactured</li> <li>• Observe the machine operations for any malfunctions and immediately inform the supervisor of any malfunction observed</li> </ul>	<ul style="list-style-type: none"> <li>• Teaching Aids: Charts, CBTs, Videos, White board Markers, White board / Flip charts.</li> <li>• Basic Tool Box Machining Technician</li> <li>• Machining Tools/ equipment: Surface marking plate, cutting tools, threading, dies &amp; guides, etc. Conventional lathe with Standard accessories</li> <li>• Vertical Milling machine with standard accessories</li> <li>• Bench Drilling machine with standard accessories</li> <li>• Bench grinder</li> <li>• Work bench with vice</li> <li>• Production CNC lathe</li> <li>• Production CNC machining centre with ATC</li> <li>• Compressor, stabilisers</li> <li>• 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,</li> </ul>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
			<p>calipers etc.</p> <ul style="list-style-type: none"> <li>• Coolant, oils and lubricants used</li> <li>• Operating Manual</li> <li>• Personal Protection Equipment: Gloves, Safety Shoes, goggles, ear plugs,</li> <li>• Workshop Safety: Fire extinguishers</li> <li>• First Aid</li> <li>• Safety signs</li> <li>• SOP Charts on safety norms and drills</li> <li>• Charts of dos and Don'ts in work area.</li> <li>• Sample work pieces: Automotive casting, Forged parts, Powder coating part, Welded parts, Sub assembly parts</li> <li>• Sample of machined parts</li> <li>• Machine drawing handbook</li> <li>• Consumables: Oil stones, Emery, Dressing stone, File cord, Tool post packing, Spares for cutting tools, Carbide inserts, Grinding Wheels etc.</li> <li>• Hand book, job orders, work order, completion material requests, and Technical Reference Books.</li> </ul>
4.	<p><b>Support the operator in conducting all post machining operations</b></p> <p><b>Theory Duration</b> (hh:mm) 30.00</p> <p><b>Practical Duration</b> (hh:mm) 55.00</p> <p><b>Corresponding NOS Code</b> ASC/N 3506</p>	<ul style="list-style-type: none"> <li>• Perform minor machine maintenance activities such as oiling or cleaning machine and its components</li> <li>• With the help of the correct tool remove the extra burrs, sharp edges, rust and chips from the metal surface</li> </ul>	<ul style="list-style-type: none"> <li>• Teaching Aids: Charts, CBTs, Videos, White board Markers, White board / Flip charts.</li> <li>• Basic Tool Box Machining Technician</li> <li>• Machining Tools/ equipment: Surface marking plate, cutting tools, threading, dies &amp; guides, etc. Conventional lathe with Standard accessories</li> <li>• Vertical Milling machine with standard accessories</li> <li>• Bench Drilling machine with standard accessories</li> <li>• Bench grinder</li> <li>• Work bench with vice</li> <li>• Production CNC lathe</li> <li>• Production CNC machining centre with ATC</li> <li>• Compressor, stabilisers</li> </ul>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
			<ul style="list-style-type: none"> <li>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, calipers etc.</li> <li>Coolant, oils and lubricants used</li> <li>Operating Manual</li> <li>Personal Protection Equipment: Gloves, Safety Shoes, goggles, ear plugs,</li> <li>Workshop Safety: Fire extinguishers</li> <li>First Aid</li> <li>Safety signs</li> <li>SOP Charts on safety norms and drills</li> <li>Charts of dos and Don'ts in work area.</li> <li>Sample work pieces: Automotive casting, Forged parts, Powder coating part, Welded parts, Sub assembly parts</li> <li>Sample of machined parts</li> <li>Machine drawing hand book</li> <li>Consumables: Oil stones, Emery, Dressing stone, File cord, Tool post packing, Spares for cutting tools, Carbide inserts, Grinding Wheels etc.</li> <li>Hand book, job orders, work order, completion material requests, and Technical Reference Books.</li> </ul>
5.	<p><b>Inspect and maintain the product quality</b></p> <p><b>Theory Duration</b> (hh:mm) 32.00</p> <p><b>Practical Duration</b> (hh:mm) 50.00</p> <p><b>Corresponding NOS Code</b> <b>ASC/N 6301</b></p>	<ul style="list-style-type: none"> <li>Conduct an inspection of a part covering the following check points</li> <li>Visual inspection of the part for scratches, dents, damages, packing as per the norm set</li> <li>Conduct complete dimensional/layout inspection as per drawing</li> <li>Note down the observations of basic inspection process and identify ok &amp; not meeting specification parts</li> </ul>	<ul style="list-style-type: none"> <li>Sample of Rejected parts for defects like dent, scratch, damage and burrs</li> <li>Packaging standards with visual aids</li> <li>List of approved labs (NABL accredited) for outsourced testing</li> <li>Stickers &amp; labels for ok, reject and Hold materials</li> <li>Formats for dimensional, material &amp; function testing of parts</li> <li>Min sample of 30 parts produced in one setting for conducting CP/CPK study (can be any category of parts)</li> <li>Operating manuals of precision</li> </ul>



Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p>a) Separate the defective parts into two categories</p> <ol style="list-style-type: none"> <li>1. Parts which can be repaired/modified and pieces which are beyond repair.</li> <li>2. Discard the pieces which are beyond repair and repair the pcs with minor defects, maintain record of each category.</li> </ol> <ul style="list-style-type: none"> <li>• Coordination with the respective process owners/seniors in QA and implement CAPA for discrepancies in the parameters identified in the report on immediate basis.</li> <li>• Participate in checking effectiveness of implementation and report the process till the discrepancies are resolved.</li> <li>• Document the observation of the inspection &amp; maintain records</li> </ul>	<p>instruments</p> <ul style="list-style-type: none"> <li>• Personnel protection equipment-gloves, safety shoes, goggles, ear plugs, workshop safety, fire extinguisher, first aid, safety signs, SOP chart on safety norms, charts of Do's &amp; don't</li> <li>• Handbooks &amp; tech reference books</li> </ul>
6.	<p><b>Maintain a safe and healthy working environment</b></p> <p><b>Theory Duration (hh:mm)</b> 11.00</p> <p><b>Practical Duration (hh:mm)</b> 15.00</p> <p><b>Corresponding NOS Code</b> ASC/N 0006</p>	<ul style="list-style-type: none"> <li>• Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals, loud noise</li> <li>• Create awareness amongst other by sharing information on the identified risks</li> <li>• Operate the machine using the recommended Personal Protective Equipment (PPE)</li> <li>• Maintain a clean and safe working environment near the work place and ensure there is no spillage of chemicals, production waste, oil, solvents etc.</li> <li>• Maintain high standards of personal hygiene at the work place</li> <li>• Ensure that the waste disposal is</li> </ul>	<ul style="list-style-type: none"> <li>• Teaching Aids: Charts, CBTs, Videos, White board Markers, White board / Flip charts.</li> <li>• Personal Protection Equipment: Gloves, Safety Shoes, goggles, ear plugs,</li> <li>• Workshop Safety: Fire extinguishers</li> <li>• First Aid</li> <li>• Safety signs</li> <li>• SOP Charts on safety norms and drills</li> <li>• Charts of dos and Don'ts in work area.</li> <li>• Standards, procedures and policies related to Health, Safety and Environment followed in companies</li> </ul>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		done in the designated area and manner as per organization SOP.	
7.	<p><b>Maintain 5S at the work premises</b></p> <p><b>Theory Duration (hh:mm)</b> 20.00</p> <p><b>Practical Duration (hh:mm)</b> 45.00</p> <p><b>Corresponding NOS Code</b> ASC/N 0021</p>	<ul style="list-style-type: none"> <li>Follow the sorting process and check that the tools, fixtures &amp; jigs that are lying on workstations are the ones in use and un-necessary items are not cluttering the work benches or work surfaces.</li> <li>Ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions</li> <li>Segregate the items which are labeled as red tag items for the process area and keep them in the correct places</li> <li>Properly stack the various types of boxes and containers as per the size/ utility to avoid any fall of items/ breakage and also enable easy sorting when required</li> <li>Make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions</li> <li>Ensure that the area has floors swept, machinery clean and generally clean. In case of cleaning, ensure that proper displays are maintained on the floor which indicate potential safety hazards</li> <li>Ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene</li> <li>Participate actively in employee work groups on 5S and encourage team members for active participation</li> </ul>	<ul style="list-style-type: none"> <li>Tools, fixtures &amp; jigs</li> <li>Personal Protection Equipment: Gloves, Safety Shoes, goggles, ear plugs</li> <li>SOP document and charts on segregation and disposal of waste</li> <li>SOP on health safety and environment</li> <li>Safety sign boards/signs</li> <li>Risk mitigation plan</li> <li>SOP on safety and fire drills</li> <li>Bins, containers, drums, trays, cabinets, lockers, boxes etc</li> <li>Cleaning material and equipment</li> <li>Sample fluids, oils, lubricants, solvents, chemicals tools/ equipment/ fasteners/ spare parts</li> </ul>

<p><b>Total Duration:</b></p> <p><b>Theory Duration</b> <b>175:00</b></p> <p><b>Practical Duration</b> <b>300:00</b></p>	<ul style="list-style-type: none"> <li>• Teaching Aids: Charts, CBTs, Videos, White board Markers, White board / Flip charts.</li> <li>• Basic Tool Box for Machining Technician</li> <li>• Machining Tools/ equipment: Surface marking plate, cutting tools, threading, dies &amp; guides, etc. Conventional lathe with Standard accessories</li> <li>• Vertical Milling machine with standard accessories</li> <li>• Bench Drilling machine with standard accessories</li> <li>• Bench grinder</li> <li>• Work bench with vice</li> <li>• Production CNC lathe</li> <li>• Production CNC machining centre with ATC</li> <li>• Compressor, stabilisers</li> <li>• 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, calipers etc.</li> <li>• Coolant, oils and lubricants used</li> <li>• Operating Manual</li> <li>• First Aid</li> <li>• Safety signs</li> <li>• SOP Charts on safety norms and drills</li> <li>• Charts of dos and Don'ts in work area.</li> <li>• Sample work pieces: Automotive casting, Forged parts, Powder coating part, Welded parts, Sub assembly parts</li> <li>• Sample of machined parts</li> <li>• Machine drawing hand book</li> <li>• Consumables: Oil stones, Emery, Dressing stone, File cord, Tool post packing, Spares for cutting tools, Carbide inserts, Grinding Wheels etc.</li> <li>• Hand book, job orders, work order, completion material requests, and Technical Reference Books.</li> <li>• Sample of Rejected parts for defects like dent, scratch, damage and burrs</li> <li>• Packaging standards with visual aids</li> <li>• List of approved labs (NABL accredited) for outsourced testing</li> <li>• Stickers &amp; labels for ok, reject and Hold materials</li> <li>• Formats for dimensional, material &amp; function testing of parts</li> <li>• Min sample of 30 parts produced in one setting for conducting CP/CPK study (can be any category of parts)</li> <li>• Operating manuals of precision instruments</li> <li>• Personnel protection equipment-gloves, safety shoes, goggles, ear plugs, workshop safety, fire extinguisher, first aid, safety signs, SOP chart on safety norms, charts of Do's &amp; don't</li> <li>• Handbooks &amp; tech reference books</li> <li>•</li> </ul>
--	--

Grand Total Course Duration: 475 Hours 0 Minutes

(This syllabus/ curriculum has been approved by [Automotive Skill development Council](#))

Trainer Prerequisites for Job role: “Machining and Quality Technician” mapped to Qualification Pack: ASC/Q 3509 Version 1.0

Sr. No.	Area	Details
1	<b>Description</b>	Machining and Quality Technician may also be called Assistant Machinist, Junior Machinist, Lathe Operator, Apprentice Machinist, Junior CNC Operator. This role primarily involves supporting the machining operator in all pre-machining activities, machining of the actual part, ad hoc repair work on the shop floors and in auto service stations, gauging, de-burring and quality inspection activities.
2	<b>Personal Attributes</b>	<ul style="list-style-type: none"> <li>The individual should be able to read basic drawings, identify various tools and equipments, observe gauges , dials etc. Maintaining arm steadiness, ability to quickly move hand to grasp and assemble objects (Dexterity),</li> </ul>
3	<b>Minimum Educational Qualifications</b>	Class X / ITI in Mechanical/Electrical
4a	<b>Domain Certification</b>	Certified for Job Role: “ <u>Machining and Quality Technician</u> ” mapped to OP: “ASC/Q 3501 and ASC/Q 6301”. Minimum accepted score-70%, as per ASDC guidelines.
4b	<b>Platform Certification</b>	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “SSC/Q1402”. Minimum accepted score-75%, as per ASDC guidelines.
5	<b>Experience</b>	<ul style="list-style-type: none"> <li>Minimum one years in different Machining /Quality activities.</li> </ul>

### Annexure: Assessment Criteria

<b>Assessment Criteria Machining and Quality Technician</b>	
<b>Job Role</b>	<b>Machining and Quality Technician</b>
<b>Qualification Pack</b>	<b>ASC/Q3509, Version 1.0</b>
<b>Sector Skill Council</b>	<b>Automotive Skills Development Council</b>

Sr. No.	Guidelines for Assessment
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2	The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below).
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria.
5	To pass the Qualification Pack, every trainee should score a minimum of 60% in aggregate and 40% in each NOS.
6	The marks are allocated PC wise; however, every NOS will carry a weight age in the total marks allocated to the specific QP.

Sr. No.	NOS No.	NOS Name	Marks Allocation			
			Total Marks	Out of	Theory	Practical Skills
1	<b>ASC/N3504</b> <b>Assist in Carrying out pre-machining activities</b>	PC1.understand the output product requirement by reading the engineering drawing specified in the work instructions/ work order	100	15	4	11
		PC2.clearly understanding the does and don'ts of the manufacturing process as defined in SOPs/ Work Instructions or defined by supervisors		14	3	11
		PC3.reading the control panel instructions/ job orders to determine the correct output product specifications		14	4	10
		PC4.understanding the tooling instructions as specified in the Operating Manual/ Work Instructions or Standard Operating Procedures		14	3	11
		PC5.selection of proper coolant and lubricant required for machining the required component		14	3	11
		PC6.set the machine stops or guides as per the specified lengths indicated through scales or work instructions		14	4	10
		PC7.measure and mark reference points/ cutting lines on the work pieces, using compasses, calipers, rulers and other measuring tools		15	4	11
			<b>TOTAL</b>	<b>100</b>	<b>25</b>	<b>75</b>
2	<b>ASC/N3505</b> <b>Support the operator performing machining operations</b>	PC1.set-up, adjust machine tools in order to perform machining operations and keep dimension within the specified tolerance limit specified in the Standard Operating Procedures/ Operating manuals	100	10	3	7
		PC2.support the operator in aligning and securely hold fixtures, cutting tools etc. onto the machine		9	3	6
		PC3.position/ secure/ align cutting tools in tool holders of the machine, using hand tools and verify their positions with measuring instruments		9	3	6
		PC4.start lathe or turning/drilling/milling machine for operations		9	2	7
		PC5.support in select cutting tools and tooling instructions as per the work instructions / supervisor 's instructions		9	2	7

Sr. No.	NOS No.	NOS Name	Marks Allocation			
			Total Marks	Out of	Theory	Practical Skills
		PC6.operate hand wheels or valves in order to feed the component and allow cooling and lubricating of the same as per the instructions given by the machinist/supervisor		9	2	7
		PC7.turn on the coolant valves and start their flow to maintain temperature in the lathe machine chamber		9	2	7
		PC8.move tool holders manually or by turning the hand wheels in order to feed tools along the machined component/ piece		8	2	6
		PC9.observe machine operations to detect defects in the component manufactured		9	2	7
		PC10.observe the machine operations for any malfunctions and immediately inform the supervisor of any malfunction observed to prevent damage to the machining equipment/ output product		10	2	8
		PC11.support the operator in recording operational data such as pressure readings, length of strokes, feed rates, speed etc in the formats specified by the supervisors		9	2	7
			<b>Total</b>	<b>100</b>	<b>25</b>	<b>75</b>
3	<b>ASC/N3506</b> <b>Support the operator in conducting all post machining operations</b>	PC1.maintain the machine as per proper operational condition	100	7	2	5
		PC2.perform minor machine maintenance activities such as oiling or cleaning machine and its components		7	1	6
		PC3.oiling or cleaning machines as per the schedules given in the maintenance plan		7	2	5
		PC4.adding coolant and lubricant in machine reservoir		7	2	5
		PC5.with the help of the correct tool remove the extra burrs, sharp edges, rust and chips from the metal surface		7	2	5
		PC6.use files, hand grinders, wire brushes, or power tools for performing de burring operations. Ensure usage of Personal Protective equipment like eye glasses and hand		7	2	5

Sr. No.	NOS No.	NOS Name	Marks Allocation			
			Total Marks	Out of	Theory	Practical Skills
		gloves.				
		PC7.for automated processes perform shot blasting/ vibro processes for completing de-burring operations		8	2	6
		PC8.support the operator in measuring the specifications of the finished component and verify conformance as per CP/ WI		7	2	5
		PC9.use devices like micrometers, vernier calipers, gauges, rulers and any other inspection equipment for measuring specifications with valid calibration status		7	1	6
		PC10.support the operator in noting down the observations of the basic inspection process and identify pieces which comply with the specified standards		7	2	5
		PC11.separate the defective pieces into two categories – pieces which can be repaired/ modified and pieces which are beyond repair and maintain records of each category		7	2	5
		PC12.assist the operator in changing different worn machine accessories, such as cutting tools( as per tool life listed, recommended) and brushes, other hand tools		7	2	5
		PC13.replace machine part as per work instructions, using hand tools or notify supervisor/ engineering personnel for taking corrective actions		7	1	6
		PC14.for automated process observe the tool change cycle in order to ensure that the selected tool is transferred to the spindle from magazine after the previous tool is transferred to the magazine from the spindle		8	2	6
			<b>Total</b>	<b>100</b>	<b>25</b>	<b>75</b>
4	<b>ASC/N6301 Inspect and maintain the product quality</b>	PC1.conduct the process of Inspection at the stages: <ul style="list-style-type: none"> <li>complete dimensional /Layout Inspection at development stage &amp; later as per the periodicity such as annual for re- validation</li> <li>in the Production phase as per the CP/ Quality</li> </ul>	100	6	2	4



Sr. No.	NOS No.	NOS Name	Marks Allocation			
			Total Marks	Out of	Theory	Practical Skills
		plan/ sampling Plan/ stage inspection plans/ First off IR				
		PC2.handle Inspection equipment and Instruments such as <ul style="list-style-type: none"> <li>• vernier, micrometers</li> <li>• height Gauge &amp; surface plate</li> <li>• acceptance/ Combination Gauges</li> <li>• simple gauges – bore, air , profile for safe storage, calibration at pre-decided frequency and have an acceptable level of R &amp; R as per SOP of the organization</li> </ul>		6	2	4
		PC3.conduct a inspection of the product covering the following checkpoints: <ul style="list-style-type: none"> <li>• visual Inspection of the part for scratches, dents , damages, packing as per the norms etc.</li> <li>• special inspection co-ordinate with other agencies e.g. Lab :Material, Lab: Standards Room, assembly / performance trials etc.</li> <li>• identification sticker/number/label placed on the product</li> <li>• functioning of the product and its components</li> <li>• documentation pertaining to the Quality</li> </ul>		6	2	4
		PC4.coordinate with the respective process owners / seniors in QA and implement CAPA for discrepancies in the parameters identified in the report on immediate basis		6	2	4
		PC5.participate in checking the effectiveness of implementation and repeat the process till the discrepancies are resolved		5	1	4
		PC6.document the observations of the inspection and maintain records of		5	1	4
		PC7.IR, ERP-System record and special process capability index calculation/charting as per the SOP raise a scrap note and dispose off the scrapped product in the scrap yard as per the defined procedure maintaining the HSE compliance		6	1	5

Sr. No.	NOS No.	NOS Name	Marks Allocation			
			Total Marks	Out of	Theory	Practical Skills
		PC8.As is the case i.e. New product/process development / Production phase, the reports and Part Submission Warrant, PPAP are to be prepared.		5	1	4
		PC9.based on the implementation of information flow system in organization like ERP/SAP , upload the reports		6	1	5
		PC10.conduct a dock audit of a sample batch from the production lot of the ready to dispatch final products covering the following checkpoints: <ul style="list-style-type: none"> <li>• product in good shape with no visible damage</li> <li>• presence of sharp edges in the product</li> <li>• wear and tear of the product</li> <li>• presence of any physical defects</li> <li>• packaging of product according to customer specification</li> <li>• packaging boxes as per the requirement for preservation</li> <li>• customer PO Number on the shipping labels</li> <li>• boxes labeled correctly with packer name</li> <li>• count on the Bill of Lading match the count on the pallet</li> <li>• boxes stacked neatly in case of pallet arrangement</li> <li>• Damages of the pallet like nails sticking out, broken boards, etc.</li> </ul>		6	2	4
		PC11.coordinate with the respective process owners/Stores and implement CAPA for discrepancies identified in the dock audit on immediate basis		5	1	4
		PC12.review the effectiveness of implementation and repeat the process till the discrepancies are resolved		5	1	4
		PC13.document the observations of dock audit and maintain records		5	1	4
		PC14.based on the implementation of information flow system in organization like ERP/SAP , upload the reports		6	2	4
		PC15.work as a CFT member of the team formed for solving a problem pertaining to the products handled .Collect data regarding the problem as decided in the		6	1	5

Sr. No.	NOS No.	NOS Name	Marks Allocation			
			Total Marks	Out of	Theory	Practical Skills
		team discussions				
		PC16.participate for preparation of Fault tree, conducting simulation and implementation of actions		5	1	4
		PC17.participate for updating relevant documentation		5	1	4
		PC18.assist the NPD department in efficient development of the new product by sharing all the problems related to QCD observed in the existing products		6	2	4
			<b>Total</b>	<b>100</b>	<b>25</b>	<b>75</b>
5	<b>ASC/Noo21 Maintain 5S at the work premises</b>	PC1.identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals ,loud noise	100	9	2	7
		PC2.inform the concerned authorities about the potential risks identified in the processes, workplace area/ layout, materials used etc		9	2	7
		PC3.inform the concerned authorities about damages which can potentially harm man/ machine during operations		9	2	7
		PC4.create awareness amongst other by sharing information on the identified risks		9	2	7
		PC5.follow the instructions given on the equipment manual describing the operating process of the equipments		9	3	6
		PC6.follow the Safety, Health and Environment related practices developed by the organization		9	3	6
		PC7.operate the machine using the recommended Personal Protective Equipments (PPE)		10	3	7
		PC8.maintain a clean and safe working environment near the workplace and ensure there is no spillage of chemicals, production waste, oil, solvents etc		9	2	7

Sr. No.	NOS No.	NOS Name	Marks Allocation			
			Total Marks	Out of	Theory	Practical Skills
		PC9.maintain high standards of personal hygiene at the work place		9	2	7
		PC10.ensure that the waste disposal takes place in the designated area as per organization SOP		9	2	7
		PC11.inform appropriately the medical officer/ HR in case of self or an employee's illness of contagious nature so that preventive actions can be planned for others		9	2	7
			<b>Total</b>	<b>100</b>	<b>25</b>	<b>75</b>
6	<b>ASC/No006 Maintain a safe and healthy working environment</b>	PC1.follow the sorting process and check that the tools, fixtures & jigs that are lying on workstations are the ones in use and un-necessary items are not cluttering the workbenches or work surfaces	100	4	1	3
		PC2.ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions		4	1	3
		PC3.follow the technique of waste disposal and waste storage in the proper bins as per SOP		4	1	3
		PC4.segregate the items which are labeled as red tag items for the process area and keep them in the correct places		4	1	3
		PC5.sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions		4	1	3
		PC6.ensure that areas of material storage areas are not overflowing		3	1	2
		PC7.properly stack the various types of boxes and containers as per the size/ utility to avoid any fall of items/ breakage and also enable easy sorting when required		4	1	3
		PC8.return the extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area		4	1	3

Sr. No.	NOS No.	NOS Name	Marks Allocation			
			Total Marks	Out of	Theory	Practical Skills
		PC9.follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards		4	1	3
		PC10.follow the proper labeling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists		4	1	3
		PC11.check that the items in the respective areas have been identified as broken or damaged		3	0	3
		PC12.follow the given instructions and check for labeling of fluids, oils, lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc.		4	1	3
		PC13.make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions		4	1	3
		PC14.check whether safety glasses are clean and in good condition		3	1	2
		PC15.keep all outside surfaces of recycling containers are clean		3	1	2
		PC16.ensure that the area has floors swept, machinery clean and generally clean. In case of cleaning, ensure that proper displays are maintained on the floor which indicate potential safety hazards		4	1	3
		PC17.check whether all hoses, cabling & wires are clean, in good condition and clamped to avoid any mishap or mix up		4	1	3
		PC18.ensure workbenches and work surfaces are clean and in good condition		3	1	2
		PC19.follow the cleaning schedule for the lighting system to ensure proper illumination		4	1	3
		PC20.store the cleaning material and equipment in the		4	1	3

Sr. No.	NOS No.	NOS Name	Marks Allocation			
			Total Marks	Out of	Theory	Practical Skills
		correct location and in good condition				
		PC21.ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene		4	1	3
		PC22.follow the daily cleaning standards and schedules to create a clean working environment		4	1	3
		PC23.attend all training programs for employees on 5 S		4	1	3
		PC24.support the team during the audit of 5 S		4	1	3
		PC25.participate actively in employee work groups on 5S and encourage team members for active participation		5	1	4
		PC26.follow the guidelines for What to do and What not to do to build sustainability in 5S as mentioned in the 5S check lists/ work instructions		4	1	3
			<b>Total</b>	<b>100</b>	<b>25</b>	<b>75</b>