

# Model Curriculum

## Machining and Quality Technician

**SECTOR:** AUTOMOTIVE  
**SUB-SECTOR:** MANUFACTURING  
**OCCUPATION:** MACHINING  
**REF ID:** ASC/Q3509, v 1.0  
**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 Level 3**"

Date of Issuance: January 10th, 2018

Valid up to: January 10th, 2020\*

\*Valid up to the next review date of the Qualification Pack



**Authorised Signatory**  
(Automotive Skills Development Council)

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# 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 Code</b>	ASC/Q3509		
<b>Version No.</b>	1.0	<b>Version Update Date</b>	05 <sup>th</sup> April 2019
<b>Pre-requisites to Training</b>	10th Standard pass		
<b>Training Outcomes</b>	<p><b>After completing this programme, participants will be able to:</b></p> <ul style="list-style-type: none"> <li>• Identify the component requirements and the equipment to be used</li> <li>• Perform operation of 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>• Perform minor machine maintenance activities</li> <li>• Perform complete dimensional, layout inspection and visual check as per product drawing</li> <li>• Record the observations in the inspection check sheet</li> <li>• Use 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>• Conduct regular cleaning and maintenance of equipment.</li> <li>• Maintain a safe and healthy work place by adhering to the safety guidelines in the working area of the organization and following the practices which are not impacting the environment in a negative manner.</li> <li>• Maintain 5S in the work premises by sorting, streamlining &amp; 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 Skills 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> Bridge Module</p>	<ul style="list-style-type: none"> <li>Discuss about automotive industry</li> <li>List various auto manufacturers</li> <li>Discuss terms associated with the sector</li> <li>List job opportunities as machining and quality technician</li> <li>Outline career growth path for a machining and quality technician</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>Follow relevant standards and procedures of the company</li> <li>Interpret information from the work order (work output).</li> <li>Interpret information from sketches and engineering drawings.</li> <li>List do's and don'ts of the manufacturing process as defined in SOPs/ work instructions</li> <li>Describe different types of machining processes and associated equipment.</li> <li>Describe the tooling instructions as specified in the Operating Manual/ Work Instructions or Standard Operating Procedures.</li> <li>Identify proper coolant and lubricant required for machining the required component.</li> <li>Carryout setting of machine stops or guides as per the work instructions</li> <li>Use measuring tools like compasses, callipers, rulers and other measuring tools.</li> <li>Demonstrate measurement and marking of reference points/ cutting lines on the work pieces.</li> </ul>	<ul style="list-style-type: none"> <li>Basic Tool Box</li> <li>Machining Technician</li> <li>Machining Tools/ equipment: Surface marking plate, cutting tools, threading, dies &amp; guides, etc.</li> <li>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 etc.</li> </ul>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
			<ul style="list-style-type: none"> <li>• Coolant, oils and lubricants used</li> <li>• Operating Manual</li> <li>• Consumables: Oil stones, Emery, Dressing stone, File cord, Tool post packing, Spares for cutting tools, Carbide inserts, Grinding Wheels etc.</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>• List tools, measuring instruments and equipment required for work.</li> <li>• Demonstrate aligning and holding of fixtures, cutting tools etc. onto the machine.</li> <li>• Select cutting tools and tooling instructions as per the work instructions.</li> <li>• Demonstrate loading of component and tools on machine.</li> <li>• Demonstrate starting of lathe or turning/ drilling/ milling machine for operations.</li> <li>• Demonstrate milling operation by specified procedure.</li> <li>• Demonstrate turning operation by specified procedure.</li> <li>• Demonstrate drilling operation by specified procedure.</li> <li>• Demonstrate operation of hand wheels or valves in order to feed the component.</li> <li>• Demonstrate lubrication on work material.</li> <li>• Evaluate machine operations for defects and malfunctions.</li> </ul>	<ul style="list-style-type: none"> <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 etc.</li> <li>• Coolant, oils and lubricants used</li> <li>• Consumables: Oil stones, Emery, Dressing stone, File</li> </ul>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
			cord, Tool post packing, Spares for cutting tools, Carbide inserts, Grinding Wheels etc.
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/N3506</p>	<ul style="list-style-type: none"> <li>• Conduct routine maintenance of machine.</li> <li>• Perform oiling or cleaning machine and its components per the maintenance plan.</li> <li>• Identify correct lubricant and coolant required and add in the machine reservoir.</li> <li>• Follow organizational procedures for maintenance activities.</li> <li>• Carryout minor repairs and adjustments to the machine.</li> <li>• Identify correct tool for removing extra burrs, sharp edges, rust and chips from the metal surface.</li> <li>• Use proper kg work.</li> <li>• Demonstrate shot blasting/ vibro processes for completing de-burring operations.</li> <li>• Conduct inspection of output product.</li> <li>• Demonstrate operation of devices micrometre, vernier calliper, gauges, scale, weighing scale and any other inspection equipment, and compare with the parameters.</li> <li>• Identify defects in workpieces.</li> <li>• Record the observations of inspection.</li> <li>• Demonstrate procedure of separation of damaged pieces.</li> </ul>	<ul style="list-style-type: none"> <li>• Basic Tool Box</li> <li>• Machining Technician</li> <li>• Machining Tools/ equipment: Surface marking plate, cutting tools, threading, dies &amp; guides, etc.</li> <li>• 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>• Sample work pieces: Automotive casting, Forged parts, Powder coating part, Welded parts, Sub assembly parts</li> </ul>
5	<p><b>Inspect and maintain the product quality</b></p>	<ul style="list-style-type: none"> <li>• Conduct an inspection of a part covering the following check points</li> </ul>	<ul style="list-style-type: none"> <li>• Sample of rejected parts for defects like</li> </ul>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	<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> ASC/N6301</p>	<ul style="list-style-type: none"> <li>Carryout 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>Record the observations of basic inspection process and identify ok &amp; not meeting specification parts</li> <li>Carryout separation of damaged pieces.</li> <li>Implement CAPA for discrepancies in the parameters identified in the report on immediate basis.</li> <li>Evaluate effectiveness of implementation of QA techniques and report the process till the discrepancies are resolved.</li> <li>Record the observation of the inspection &amp; maintain as per organizational policy</li> </ul>	<p>dent, scratch, damage and burrs</p> <ul style="list-style-type: none"> <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> </ul>
6	<p><b>Maintain a safe, clean and healthy working environment</b></p> <p><b>Theory Duration</b> (hh:mm) 10:00</p> <p><b>Practical Duration</b> (hh:mm) 15:00</p> <p><b>Corresponding NOS Code</b> ASC/N0006</p>	<ul style="list-style-type: none"> <li>List workplace hazards and risks</li> <li>Use personal protective equipment like safety gloves, safety glasses, safety shoes and safety helmet at workplace.</li> <li>Identify activities which can cause potential injury</li> <li>Report concerned authorities about the potential risks</li> <li>Report concerned authorities about machine breakdowns, damages</li> <li>Assist the safety team and the supervisor in creating the risk mitigation plan</li> <li>Follow the instructions given in the equipment manual</li> <li>Follow the safety, health and environment related practices</li> <li>Follow safety signs placed on the shop floor</li> <li>Operate the machine using the recommended Personal Protective Equipment (PPE).</li> <li>Demonstrate use of fire-fighting equipment</li> <li>List and explain the contents of the first aid kit</li> <li>Maintain a clean and safe working environment</li> <li>Attend all safety and fire drills to be self-aware of safety hazards and preventive techniques</li> <li>Maintain high standards of personal hygiene at the work place</li> <li>Follow organizational procedure of waste disposal</li> </ul>	<p>Cleaning agents, Cleaning cloth, Waste container, Dust pan &amp; brush set, Liquid soap, Hand towel, Fire extinguisher, Portable welding curtains, Leather safety gloves, leather aprons, safety glasses with side shields, Ear Plug, Welding respirator, Screen welding helmet type with filter glasses, Safety Shoe and First aid kit</p>



Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> <li>Report appropriately to medical officer/ HR in case of self or an employee's illness</li> </ul>	
7	<p><b>Maintaining 5S at the work premises</b></p> <p><b>Theory Duration</b> (hh:mm) 20:00</p> <p><b>Practical Duration</b> (hh:mm) 45:00</p> <p><b>Corresponding NOS Code</b> ASC/N0021</p>	<ul style="list-style-type: none"> <li>Examine that work area, tools, equipment and materials are clean</li> <li>Demonstrate storage of cleaning material and equipment in the correct location and in good condition</li> <li>Follow good grooming practices</li> <li>Identify daily cleaning standards and schedules to create a clean working environment</li> <li>Demonstrate procedure of materials, tools and equipment's and spare parts sorting.</li> <li>Demonstrate proper labelling procedures</li> <li>Demonstrate proper storage procedures</li> <li>Perform segregation of waste into hazardous and non-hazardous waste and dispose the waste as per SOP</li> <li>Follow 5S guidelines at workplace</li> </ul>	<p>Fire extinguisher, First aid, disposal of hazardous items and parts to provide an overview</p>
	<p><b>Total Duration</b></p> <p><b>Theory Duration</b> (hh:mm) 175:00</p> <p><b>Practical Duration</b> (hh:mm) 300:00</p>	<p><b>Unique Equipment Required</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> </ul>	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<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 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> </ul>	

Grand Total Course Duration: **475Hours, 0 Minutes**

(This syllabus/ curriculum has been approved by **Automotive Skills Development Council**)

## Trainer Prerequisites for Job role: “Machining and Quality Technician” mapped to Qualification Pack: “ASC/Q3509, Version 1.0”

S. No.	Area	Details
1	<b>Description</b>	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “ <u>ASC/Q3509, Version 1.0</u> ”.
2	<b>Personal Attributes</b>	<ul style="list-style-type: none"> <li>• Aptitude for conducting training and pre/post work to ensure competent, employable candidates at the end of the training.</li> <li>• Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well organized and focused.</li> <li>• Eager to learn and keep oneself abreast of the latest developments and newer technologies used in the various systems of the vehicle and its aggregates is highly desirable.</li> <li>• Should be able to demonstrate the usage of workshop equipment, instruments, special instruments and tools.</li> <li>• Should have sharp diagnostic abilities for identifying reasons of problems in vehicles and troubleshoot.</li> <li>• Should be hands-on with machining practices to provide actual training.</li> </ul>
3	<b>Minimum Educational Qualifications</b>	Diploma in mechanical engineering
4a	<b>Domain Certification</b>	Certified for Job Role: “ <u>Machining and Quality Technician</u> ” mapped to QP: <u>ASC/Q3509, v1.0</u> . Minimum qualifying score 80%, as per ASDC guidelines
4b	<b>Platform Certification</b>	Recommended that the Trainer is certified for the Job Role: “ <u>Trainer</u> ”, mapped to the Qualification Pack: “ <u>MEP/ Q2601</u> ”. Minimum accepted score as per ASDC guidelines is 80%.
5	<b>Experience</b>	3 years for diploma holder Minimum one year in different Machining /Quality activities.

## Annexure: Assessment Criteria

<b>Assessment Criteria</b>	
<b>Job Role</b>	<b>Machining and Quality Technician</b>
<b>Qualification Pack</b>	<b>ASC/Q3509, v1.0</b>
<b>Sector Skill Council</b>	<b>Automotive</b>

### 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. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (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 criterion.
5. To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
6. In case of *unsuccessful completion*, the trainee may seek reassessment on the Qualification Pack.

Assessable Outcome	Assessment Criteria	Marks Allocation			
		Total Marks	Out of	Theory	Practical Skills
<b>ASC/N3504 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

Assessable Outcome	Assessment Criteria	Marks Allocation			
		Total Marks	Out of	Theory	Practical Skills
	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>
<b>ASC/N3505</b> <b>Support the operator in 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
	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		10	2	8

Assessable Outcome	Assessment Criteria	Marks Allocation			
		Total Marks	Out of	Theory	Practical Skills
	damage to the machining equipment/ output product				
	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>
<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 gloves.		7	2	5
	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		7	2	5

Assessable Outcome	Assessment Criteria	Marks Allocation			
		Total Marks	Out of	Theory	Practical Skills
	repaired/ modified and pieces which are beyond repair and maintain records of each category				
	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>
<b>ASC/N6301</b> <b>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 plan/ sampling Plan/ stage inspection plans/ First off IR</li> </ul>	100	6	2	4
	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 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:</li> </ul>		6	2	4

Assessable Outcome	Assessment Criteria	Marks Allocation			
		Total Marks	Out of	Theory	Practical Skills
	Standards Room, assembly / performance trials etc. <ul style="list-style-type: none"> <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>				
	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
	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> </ul>		6	2	4



Assessable Outcome	Assessment Criteria	Marks Allocation			
		Total Marks	Out of	Theory	Practical Skills
	<ul style="list-style-type: none"> <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>				
	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 team discussions		6	1	5
	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>

Assessable Outcome	Assessment Criteria	Marks Allocation			
		Total Marks	Out of	Theory	Practical Skills
<b>ASC/N0021</b> <b>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
	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>
<b>ASC/N0006</b> <b>Maintain a safe and healthy</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	100	4	1	3

Assessable Outcome	Assessment Criteria	Marks Allocation			
		Total Marks	Out of	Theory	Practical Skills
<b>working environment</b>	cluttering the workbenches or work surfaces				
	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
	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

Assessable Outcome	Assessment Criteria	Marks Allocation			
		Total Marks	Out of	Theory	Practical Skills
	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 correct location and in good condition		4	1	3
	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 5S		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>

Assessable Outcome	Assessment Criteria	Marks Allocation			
		Total Marks	Out of	Theory	Practical Skills
	<b>Grand Total</b>	<b>600</b>	<b>600</b>	<b>150</b>	<b>450</b>
	<b>Percentage Weightage (%)</b>			<b>25</b>	<b>75</b>