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# Model Curriculum

## Composite Repair Technician

**SECTOR: AEROSPACE AND AVIATION**  
**SUB-SECTOR: MAINTENANCE REPAIR & OVERHAULING**  
**OCCUPATION: BASE MAINTENANCE**  
**REF ID: AAS/Q2003**  
**NSQF LEVEL: 4**

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## Certificate

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

is hereby issued by the

**AEROSPACE & AVIATION SECTOR SKILL COUNCIL (AASSC)**

for the

### MODEL CURRICULUM

Complying to National Occupational Standards of

Job Role/Qualification Pack : '**Composite Repair Technician**' QP No. '**AAS/Q2003**' **NSQF level 4**'

Date of issuance : 01 September 2017  
Valid up to : 31 August 2018  
\* Valid up to the next review date of the Qualification Pack



(Authorised signatory)  
Aerospace & Aviation Sector Skill Council (AASSC)

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# Composite Repair Technician

## CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Composite Repair Technician”, in the “Aerospace & Aviation” Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	Composite Repair Technician		
Qualification Pack Name & Reference ID.	AAS/Q2003		
Version No.	1.0	Version Update Date	15 – 03 - 2017
Pre-requisites to Training	Class XII (Science)		
Training Outcomes	<p>After completing this programme, participants will be able to;</p> <ul style="list-style-type: none"> <li>• Process (machine) composite parts, foams, cores,</li> <li>• Process (machine) epoxy/metallic tools, Numerical Control (NC) fixtures,</li> <li>• Check templates &amp; composite master models</li> <li>• Carry out aircraft composite repairs</li> <li>• Identify and use basic tools, equipment &amp; materials; Understanding of carrying out tool box, machinery equipment for its operation.</li> <li>• Acquire basic communication skills and good inter-personal skills.</li> <li>• Stand and walk for long periods of time consistent kneeling, squatting and reaching above the head with caution to avoid accidents.</li> <li>• Work under pressure and to deadlines.</li> <li>• Take clear-cut decisions, have good mathematical ability, and will be able to work well in a team.</li> </ul>		

This course encompasses 5 out of 5 National Occupational Standards (NOS) of “Composite Repair Technician” Qualification Pack issued by “SSC: Aerospace & Aviation Sector Skill Council (AASCC)”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<p><b>Follow safety and security procedures</b>  <b>Theory Duration</b> (hh:mm)  <b>25:00</b>  <b>Practical Duration</b>            (hh:mm)  <b>23:00</b>  <b>Corresponding NOS Code</b>  <b>AAS/N0502</b></p>	<p>Candidates will be able to;</p> <ul style="list-style-type: none"> <li>• comprehend the organisation’s safety and security policies and procedures</li> <li>• comprehend the regulatory guidelines on safe conduct of operations and maintenance of conditions to thwart any acts of unlawful interference</li> <li>• report any identified breaches of safety, and security policies and procedures to the designated person</li> <li>• coordinate with other resources at the workplace (within and outside the organization) to achieve safe and secure environment</li> <li>• identify and mitigate any safety and security hazards like illness, accidents, fires or acts of unlawful interference if it falls within the limits of individual’s authority</li> <li>• report any hazards outside the individual’s authority to the relevant person in line with organisational procedures and regulatory guidelines</li> <li>• follow organisation’s emergency procedures for accidents, fires or acts of unlawful interference</li> <li>• identify and recommend opportunities for improving health, safety, and security to the designated person</li> <li>• complete all health and safety records are updates and procedures well defined</li> </ul>	<p>White/Black board, Markers, computer and projector, trainer’s guide, student handbook,</p>
2	<p><b>Carrying out pre-machining activities for composites</b>  <b>Theory Duration</b> (hh:mm)  <b>46:00</b>  <b>Practical Duration</b>            (hh:mm)  <b>55:00</b>  <b>Corresponding NOS Code</b>  <b>AAS/N2006</b></p>	<p>Candidates will be able to;</p> <ul style="list-style-type: none"> <li>• collect NC program with Controlled Copy from supervisor</li> <li>• verify part no., NC program no., &amp; NC machining fixture no. and related revision &amp; issue as mentioned in the route book</li> <li>• ensure NC trimming fixtures are certified and measuring instruments are calibrated</li> <li>• sand the burrs on the component if any so that it sits on the fixture properly, carry out manual reaming to ensure that locating pins enter in tooling holes</li> <li>• check raw condition of the material by referring inspection report</li> <li>• cut the block as per NC setup sheet, skim cut using manual programming in case of foam/core/composite master model machining</li> </ul>	<p>White/Black board/ Chart paper, Markers/Computer and projector, trainer’s guide, student handbook,</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> <li>• carry out basic maintenance of machine</li> <li>• clean the machine bed using vacuum cleaner and wipe with cloth</li> <li>• load the trim fixture on the machine bed after cleaning the bottom resting surface using oil stone and wipe with cloth. Ensure that there are no foreign objects present</li> <li>• load the cutting tools in tool holders and load the holders in the tool magazine as per NC set up sheet</li> <li>• measure the tool length and tool run-out for all tools and record in Log book. Ensure that tool run out is within the tolerance</li> <li>• clean the trim fixture with soft cloth and apply the grease (Molykote) on the seals and wipe gently. Ensure that seals are in proper condition &amp; position</li> <li>• load the composite component manually or through hoist and position the same securely over the machining fixture. Apply the vacuum, tap test, check gap using feeler gauge in case of vacuum fixture.</li> <li>• Ensure vacuum pressure is minimum 700mbar. For mechanical clamping use Allen screw/ nut bolt</li> <li>• Ensure the component is well supported in case of drilling.</li> <li>• Apply re-release agent on the component and apply quick setting adhesive to fill the gap between the component and fixture in order to avoid delamination</li> <li>• check &amp; ensure correct work offset &amp; Tool offset/Tool compensation, Tool number</li> <li>• check regularly for the tool bluntness, edge built up &amp; chipping of tool cutting edges</li> <li>• check the quality of compressed air supply to the machine in order to avoid moisture ingress in composite parts/cores/foams</li> <li>• ensure clear understanding the Dos &amp; Don'ts of the manufacturing process as defined in SOP/work instructions or defined by supervisors</li> </ul>	
3	<p><b>Performing different composites machining operations</b>  <b>Theory Duration (hh:mm)</b>  <b>33:00</b>  <b>Practical Duration</b></p>	<p>Candidates will be able to;</p> <ul style="list-style-type: none"> <li>• verify part no., NC program no., &amp; NC machining fixture no. and related revision &amp; issue as mentioned in the route book</li> <li>• check &amp; ensure correct work offset &amp;</li> </ul>	<p>White/Black board, Markers, computer and projector, trainer's guide, student handbook,</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	<p>(hh:mm)</p> <p><b>69:00</b></p> <p><b>Corresponding NOS Code</b></p> <p><b>AAS/N2007</b></p>	<p>Tool offset/Tool compensation in case of a CNC Machine</p> <ul style="list-style-type: none"> <li>• record datum's before starting and after completion of part</li> <li>• check the sharpness of the cutting tools visually</li> <li>• dry run all the programs with close observation for the prove out of the part. Move axes to see whether spindle is colliding with the fixture/clamps/job &amp; adjust accordingly.</li> <li>• Consult Supervisor/ NC Programmer in case of any abnormality.</li> <li>• Ensure the component is well supported in order to avoid exit delaminating.</li> <li>• check regularly for the tool bluntness, edge built up &amp; chipping of tool cutting edges</li> <li>• clearly understand the Dos &amp; Donts of the manufacturing process as defined in SOP/work instructions or defined by Supervisors</li> <li>• start the Turning/Milling/boring/drilling CNC Machine for operation</li> <li>• select the right cutting tools as per tooling instructions and as per work/Supervisor's instruction</li> <li>• ensure the clear understanding of the properties of the composite parts for machining activities</li> <li>• ensure that the right command and programme number are entered in the CNC Machine as defined machining parameter</li> <li>• check machine Zero &amp; work zero before start of the machine &amp; after power failure</li> <li>• operate hand wheels/ control knobs in order to feed the component in case of manual machining operation</li> <li>• use dust extraction vacuum in order to evacuate composite debris and to cool the cutting tool</li> <li>• brush or spray lubricate material on work pieces where required</li> <li>• take appropriate action in case of any irregularities e.g.: Power failure, rejection, Tool breakage etc.</li> <li>• deburr the machined composite parts using emery sheets</li> <li>• execute radio probe programme in order to inspect the component in machine itself</li> <li>• offload the machined composite</li> </ul>	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p>parts from the fixture/bed by using proper material handing device or by hand for small parts</p> <ul style="list-style-type: none"> <li>• use proper personal protective equipment's (PPE)- Gloves, nose mask, goggles, cap, apron etc. while machining composites to ensure safety from composite dust</li> <li>• observe machine operations to detect defects if any in the component manufactured</li> <li>• observe the machine operations for any malfunctions and immediately inform the Supervisor/Maintenance Team of any malfunction observed to prevent damage to the machine or component</li> <li>• ensure recording of operational data such as pressure readings, length of strokes, feed rates, speed etc. in the format specified by the Supervisor</li> <li>• ensure tool replacement as per recommended tool life in number of pieces</li> <li>• ensure reading of key dimensions on control charts/S record; provide required tool offsetting with the help of supervisor on correct side based on the reading</li> <li>• ensure checking of the dimensions during the machining process considering the stock available</li> <li>• record the measured dimensions in the log book/control charts</li> <li>• check all dimensions after machining as per drawing &amp; ensuring the correct dimensions</li> <li>• carry out any rework on the parts in case of deviations</li> <li>• ensure only calibrated instruments &amp; gauges are used for inspection</li> <li>• prove the 1st off part to the Inspector &amp; getting it accepted before taking up the batch production</li> </ul>	
4	<p><b>Performing post machining operations for composites</b>  <b>Theory Duration</b> (hh:mm)  <b>40:00</b>  <b>Practical Duration</b>            (hh:mm)  <b>61:00</b>  <b>Corresponding NOS Code</b>  <b>AAS/N2008</b></p>	<p>Candidates will be able to;</p> <ul style="list-style-type: none"> <li>• compare datum's after completion of part with the previous value</li> <li>• deburr the machined composite parts using emery sheets</li> <li>• cut the lugs manually. Round off sharp corners wherever required</li> <li>• execute radio probe programme in order to inspect the component before unloading</li> </ul>	<p>White/Black board/ Chart paper, Markers/Computer and projector, trainer's guide, student handbook,</p>



Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> <li>• measure cut-out dimension, thickness using Vernier calliper and micrometer</li> <li>• offload the machined composite parts from the fixture/bed by using proper material handing device or by hand for small parts</li> <li>• cover the machined component using bubble sheet</li> <li>• clean the machine bed using vacuum cleaner and wipe with cloth</li> <li>• switch off dust extraction system and vacuum supply after completion of machining</li> <li>• record the measured dimensions in the log book/control charts</li> <li>• check all dimensions after machining as per drawing &amp; ensuring the correct dimensions</li> <li>• carry out any rework on the parts in case of deviations</li> </ul>	
5	<p><b>Maintain 5S at the work premises</b>  <b>Theory Duration</b> (hh:mm)  <b>09:00</b>  <b>Practical Duration</b>            (hh:mm)  <b>23:00</b>  <b>Corresponding NOS Code</b>  <b>ASC/N0021</b></p>	<p>Candidates will be able to;</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 workbenches or work surfaces.</li> <li>• ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions</li> <li>• follow the technique of waste disposal and waste storage in the proper bins as per SOP</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>• sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions</li> <li>• ensure that areas of material storage areas are not overflowing</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>• return the extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area</li> <li>• follow the floor markings/ area markings used for demarcating the various sections in the plant as per</li> </ul>	<p>White/Black board, Markers, computer and projector, trainer's guide, student handbook,</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p>the prescribed instructions and standards</p> <ul style="list-style-type: none"> <li>• follow the proper labeling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists</li> <li>• check that the items in the respective areas have been identified as broken or damaged</li> <li>• 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.</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>• check whether safety glasses are clean and in good condition</li> <li>• keep all outside surfaces of recycling containers are clean</li> <li>• ensure that the area has floors swept, machinery clean and generally clean.</li> <li>• Ensure that proper displays are maintained on the floor which indicate potential safety hazards in case of cleaning,</li> <li>• check whether all hoses, cabling &amp; wires are clean, in good condition and clamped to avoid any mishap or mix up</li> <li>• ensure workbenches and work surfaces are clean and in good condition</li> <li>• follow the cleaning schedule for the lighting system to ensure proper illumination</li> <li>• store the cleaning material and equipment in the correct location and in good condition</li> <li>• ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene</li> <li>• follow the daily cleaning standards and schedules to create a clean working environment</li> <li>• attend all training programs for employees on 5S</li> <li>• support the team during the audit of 5 S</li> <li>• participate actively in employee work groups on 5S and encourage team members for active participation</li> <li>• follow the guidelines for What to do</li> </ul>	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		and What not to do to build sustainability in 5S as mentioned in the 5S check lists/ work instructions	
	<b>Total Duration</b> <b>Theory Duration</b> (hh:mm) <b>153:00</b> <b>Practical Duration</b> (hh:mm) <b>231:00</b>	Unique equipment used; <ul style="list-style-type: none"> <li>• personal protective equipment (PPE) (consisting of safety jacket, safety goggles, ear plugs, gloves, safety shoes &amp; safety helmet)</li> <li>• Specialist video/2D or 3D computer aided instructional packages</li> <li>• typical turning/Milling/boring/drilling machines</li> <li>• Turning/Milling/boring/drilling CNC Machines</li> <li>• Common &amp; special tool kits</li> <li>• Common &amp; special gauges and testers</li> <li>• Fire extinguisher</li> <li>• Ventilating equipment</li> <li>• Mask</li> <li>• Vacuum cleaner</li> </ul>	

*Grand Total Course Duration: **384 Hours, 0 Minutes***

*(This syllabus/ curriculum has been approved by **SSC: Aerospace & Aviation**)*

## Trainer Prerequisites for Job role: “Composite Repair Technician” mapped to Qualification Pack: “AAS/Q2003”

Sl. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “AAS/Q2003”.
2	Personal Attributes	Aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well organised and focused, eager to learn and keep oneself updated with the latest in the mentioned field.
3	Minimum Educational Qualifications	Graduate (with Class XII in Science)
4a	Domain Certification	Statutory Certificate from Aerospace & Aviation Sector Skill Council (AASSC) for Job Role: “Composite Repair Technician” mapped to QP: “AAS/Q2003”. Minimum accepted score for domain certification will be 80%.
4b	Platform Certification	Recommended that the Trainer is certified for the job role “Trainer” mapped to the Qualification Pack : “MEP/Q 0102”. Minimum accepted percentage as per respective SSC guidelines is 80%.
5	Experience	2-3 years of experience

## Annexure: Assessment Criteria

**Job Role** : Composite Repair Technician  
**Qualification Pack** : AAS/Q2003  
**Sector Skill Council** : Aerospace & Aviation

### 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 70% in aggregate
6. The marks are allocated PC wise, however, every NOS will carry a weightage in the total marks allocated to the specific QP

Assessment outcomes	Assessment Criteria for outcomes	Marks Allocation			
		Total Marks	Out of	Theory	Skills Practical
1. AAS/N0502 Follow safety and security procedures	PC 1. comply with the organisation's safety and security policies and procedures	<b>100</b>	10	5	5
	PC 2. comply with the regulatory guidelines on safe conduct of operations and maintenance of conditions to thwart any acts of unlawful interference		10	5	5
	PC 3. report any identification breaches of safety, and security policies and procedures to the designated person		10	5	5
	PC 4. coordinate with other resource at the workplace (within and outside the organisation) to achieve safe and secure environment		20	10	10
	PC 5. identify and mitigate any safety and security hazards like illness, accidents, fires or acts of unlawful interference if it falls within the limit of individual's authority		10	5	5
	PC 6. report any hazards outside the individual's authority to the relevant person in line with organisational procedures and regulatory guidelines		20	10	10
	PC 7. follow organisation's emergency procedures for accidents, fires or acts of unlawful interference		5	2	3
	PC 8. identify and recommend opportunities for improving health, safety, and security to the designated person		10	8	2
	PC 9. complete all health and safety records are updates and procedures well defined		5	2	3
	<b>Total</b>	<b>100</b>	<b>52</b>	<b>48</b>	
2. AAS/N2006 Carrying out machining activities for composites	PC1. collect NC program with CONTROLLED COPY from supervisor	<b>100</b>	5	2	3
	PC2. verify part no., NC program no., & NC machining fixture no. and related revision & issue as mentioned in the route book		5	2	3
	PC3. check for NC trimming fixtures are certified and measuring instruments are calibrated		5	2	3
	PC4. sand the burrs on the component if any so that it sits on the fixture properly. Carryout manual reaming to ensure that locating pins enter in tooling holes		5	2	3

Assessment outcomes	Assessment Criteria for outcomes	Marks Allocation			
		Total Marks	Out of	Theory	Skills Practical
	PC5. check raw condition of the material by referring inspection report		5	2	3
	PC6. cut the block as per NC setup sheet, skim cut using manual programming in case of foam / core / composite master model machining		5	2	3
	PC7. carry out basic maintenance of machine		5	2	3
	PC8. clean the machine bed using vacuum cleaner and wipe with cloth		5	2	3
	PC9. load the trim fixture on the machine bed after cleaning the bottom resting surface using oil stone and wipe with cloth. Ensure that there are no foreign objects present		6	3	3
	PC10. load the cutting tools in tool holders and load the holders in the tool magazine as per NC set up sheet		6	3	3
	PC11. measure the tool length and tool run-out for all tools and record in Log book. Ensure that tool run out is within the tolerance		6	3	3
	PC12. clean the trim fixture with soft cloth and apply the grease (Molykote) on the seals and wipe gently. Ensure that seals are in proper condition & position		6	3	3
	PC13. load the composite component manually or through hoist and position the same securely over the machining fixture. Apply the vacuum, tap test, check gap using feeler gauge. Ensure vacuum pressure is minimum 700mbar. For mechanical clamping use Allen screw/ nut bolt		6	3	3
	PC14. Ensure the component is well supported in case of drilling (Apply rerelease agent on the component and apply quick setting adhesive to fill the gap between the component and fixture)in order to avoid exit delaminating		6	3	3
	PC15. check & ensure correct work offset & Tool offset/Tool compensation, Tool number		6	3	3
	PC16. check regularly for the tool bluntness, edge built up & chipping of tool cutting edges		6	3	3
	PC17. check the quality of compressed air supply to the machine in order to avoid		6	3	3

Assessment outcomes	Assessment Criteria for outcomes	Marks Allocation			
		Total Marks	Out of	Theory	Skills Practical
	moisture ingress in composite parts/ cores/foams				
	PC18. clearly understand the Dos & Don'ts of the manufacturing process as defined in SOP/work instructions or defined by supervisors		6	3	3
		<b>Total</b>	<b>100</b>	<b>46</b>	<b>54</b>
3. AAS/N2007 Performing different composites machining operations	PC1. verify part no., NC program no., & NC machining fixture no. and related revision & issue as mentioned in the route book	<b>100</b>	4	2	2
	PC2. check & ensure correct work offset & Tool offset/Tool compensation in case of a CNC Machine		4	2	2
	PC3. record datum's before starting and after completion of part		4	2	2
	PC4. check the sharpness of the cutting tools visually		4	2	2
	PC5. dry run all the programs with close observation for the prove out of the part. Move axes to see whether spindle is colliding with the fixture/clamps/job & adjust accordingly. Consult Supervisor/ NC Programmer in case of any abnormality		3	1	2
	PC6. Ensure the component is well supported in order to avoid exit delaminating in case of drilling		3	1	2
	PC7. check regularly for the tool bluntness, edge built up & chipping of tool cutting edges		3	1	2
	PC8. clearly understand the Dos & Don'ts of the manufacturing process as defined in SOP/work instructions or defined by Supervisors		3	1	2
	PC9. start the Turning/ Milling/ boring/ drilling CNC Machine for operation		3	1	2
	PC10. select the right cutting tools as per tooling instructions and as per work/Supervisor's instruction		3	1	2
	PC11. for machining activities ensure the clear understanding of the properties of the composite parts		3	1	2
PC12. ensure that the right command and programme number are entered in the CNC Machine as defined machining parameter	3	1	2		



Assessment outcomes	Assessment Criteria for outcomes	Marks Allocation			
		Total Marks	Out of	Theory	Skills Practical
	PC13. check machine Zero & work zero before start of the machine & after power failure		3	1	2
	PC14. operate hand wheels/ control knobs in order to feed the component in case of manual machining operation		3	1	2
	PC15. use dust extraction vacuum in order to evacuate composite debris and to cool the cutting tool		3	1	2
	PC16. brush or spray lubricate material on work pieces where required		3	1	2
	PC17. take appropriate action in case of any irregularities e.g.: Power failure, rejection. Tool breakage etc.		3	1	2
	PC18. deburr the machined composite parts using emery sheets		3	1	2
	PC19. execute radio probe programme in order to inspect the component in machine itself		3	1	2
	PC20. offload the machined composite parts from the fixture/bed by using proper material handing device or by hand for small parts		3	1	2
	PC21. use proper personal protective equipment's (PPE)- Gloves, nose mask, goggles, cap, apron etc. while machining composites to ensure safety from composite dust		3	1	2
	PC22. observe machine operations to detect defects if any in the component manufactured		3	1	2
	PC23. observe the machine operations for any malfunctions and immediately inform the Supervisor/Maintenance Team of any malfunction observed to prevent damage to the machine or component		3	1	2
	PC24. ensure recording of operational data such as pressure readings, length of strokes, feed rates, speed etc. in the format specified by the Supervisor		3	1	2
	PC25. ensure tool replacement as per recommended tool life in number of pieces		3	1	2
	PC26. ensure reading of key dimensions on control charts/SPC record; provide required tool offsetting with the help of		3	1	2

Assessment outcomes	Assessment Criteria for outcomes	Marks Allocation			
		Total Marks	Out of	Theory	Skills Practical
	supervisor on correct side based on the reading				
	PC27. ensure checking of the dimensions during the machining process considering the stock available		3	1	2
	PC28. record the measured dimensions in the log book/control charts		3	1	2
	PC29. check all dimensions after machining as per drawing & ensuring the correct dimensions		3	1	2
	PC30. carry out any rework on the parts in case of deviations		3	1	2
	PC31. ensure only calibrated instruments & gauges are used for inspection		3	1	2
	PC32. first off proving by offering the 1st off part to the Inspector & getting it accepted before taking up the batch production		3	1	2
		<b>Total</b>	<b>100</b>	<b>32</b>	<b>68</b>
4. AAS/N2008 Performing post machining operations for composites	PC1. compare datum's after completion of part with the previous value		5	2	3
	PC2. deburr the machined composite parts using emery sheets		5	2	3
	PC3. cut the lugs manually. Round off sharp corners wherever required		5	2	3
	PC4. execute radio probe programme in order to inspect the component before unloading		5	2	3
	PC5. measure cut-out dimension, thickness using Verniercalliper and micrometer		10	4	6
	PC6. offload the machined composite parts from the fixture/bed by using proper material handing device or by hand for small parts	<b>100</b>	10	4	6
	PC7. cover the machined component using bubble sheet		10	4	6
	PC8. clean the machine bed using vacuum cleaner and wipe with cloth		10	4	6
	PC9. switch off dust extraction system and vacuum supply after completion of machining		10	4	6
	PC10. record the measured dimensions in the log book/control charts		10	4	6
	PC11. check all dimensions after machining as per drawing & ensuring the correct dimensions		10	4	6

Assessment outcomes	Assessment Criteria for outcomes	Marks Allocation			
		Total Marks	Out of	Theory	Skills Practical
	PC12. carry out any rework on the parts in case of deviations		10	4	6
		<b>Total</b>	<b>100</b>	<b>40</b>	<b>60</b>
5. ASC/N0021 Maintain 5s at the work premises	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	<b>170</b>	30	10	20
	PC2. ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions				
	PC3. follow the technique of waste disposal and waste storage in the proper bins as per SOP				
	PC4. segregate the items which are labeled as red tag items for the process area and keep them in the correct places				
	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				
	PC6. ensure that areas of material storage areas are not overflowing				
	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				
	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				
	PC9. follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards				
	PC10. follow the proper labeling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists				
	PC11. check that the items in the respective areas have been identified as broken or damaged				
	PC12. follow the given instructions and check for labeling of fluids, oils.				
			30	10	20

Assessment outcomes	Assessment Criteria for outcomes	Marks Allocation			
		Total Marks	Out of	Theory	Skills Practical
	lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc.				
	PC13. make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions				
	PC14. check whether safety glasses are clean and in good condition				
	PC15. keep all outside surfaces of recycling containers are clean				
	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				
	PC17. check whether all hoses, cabling & wires are clean, in good condition and clamped to avoid any mishap or mix up		50	10	40
	PC18. ensure workbenches and work surfaces are clean and in good condition				
	PC19. follow the cleaning schedule for the lighting system to ensure proper illumination				
	PC20. store the cleaning material and equipment in the correct location and in good condition				
	PC21. ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene				
	PC22. follow the daily cleaning standards and schedules to create a clean working environment				
	PC23. attend all training programs for employees on 5 S				
	PC24. support the team during the audit of 5S		30	10	20
	PC25. participate actively in employee work groups on 5S and encourage team members for active participation				
	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				
		<b>Total</b>	<b>170</b>	<b>50</b>	<b>120</b>