
Model Curriculum

Aircraft Powerplant Technician (Aerospace Welder)

SECTOR: AEROSPACE AND AVIATION
SUB-SECTOR: MAINTENANCE REPAIR & OVERHAULING
OCCUPATION: BASE MAINTENANCE
REF ID: AAS/Q2001, V 2.0
NSQF LEVEL: 4



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 : '**Aircraft Powerplant Technician (Aerospace Welder)**' QP No. '**AAS/Q2001**' **NSQF level 4**'



(Authorised signatory)

Aerospace & Aviation Sector Skill Council (AASSC)

Date of issuance : 01 November 2017

Valid up to : 31 October 2018

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

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Aircraft Powerplant Technician (Aerospace Welder)

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Aircraft Powerplant Technician (Aerospace Welder)”, in the “Aerospace and Aviation” Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	Aircraft Powerplant Technician (Aerospace Welder)		
Qualification Pack Name & Reference ID.	AAS/Q2001		
Version No.	1.0	Version Update Date	15 – 03 - 2017
Pre-requisites to Training	Class XII (Science St)		
Training Outcomes	<p>After completing this programme, participants will be able to;</p> <ul style="list-style-type: none"> • Responsibly support aircraft engine assembly and disassembly. • Carry out various welding activities and repair of engine hot/cold sections for all types of aircrafts • Carry out various welding activities/ repair structural components for all types of aircrafts • Carry out various welding activities/ repair of mechanical components for all types of aircrafts • Perform welding in joining various types of metallic frames in aero structures using welding and flame spray coatings. • Perform welding in joining various types of metallic frames in aircraft components using welding and flame spray coatings, • Acquire basic communication skills and good inter-personal skills. • Achieve excellent written communication 		

This course encompasses 6 out of 6 Compulsory National Occupational Standards (NOS) of “Aircraft Powerplant Technician (Aerospace Welder)” Qualification Pack and 1 out of 1 Optional NOS issued by “Aerospace and Aviation Sector Skill Council (AASCC)”.

Compulsory NOS :

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<p>Follow safety and security procedures Theory Duration (hh:mm) 25:00 Practical Duration (hh:mm) 23:00 Corresponding NOS Code AAS/N0502</p>	<p>Candidates will be able to;</p> <ul style="list-style-type: none"> comprehend the organisation’s safety and security policies and procedures comprehend the regulatory guidelines on safe conduct of operations and maintenance of conditions to thwart any acts of unlawful interference report any identified breaches of safety, and security policies and procedures to the designated person coordinate with other resources at the workplace (within and outside the organization) to achieve safe and secure environment 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 report any hazards outside the individual’s authority to the relevant person in line with organisational procedures and regulatory guidelines follow organisation’s emergency procedures for accidents, fires or acts of unlawful interference identify and recommend opportunities for improving health, safety, and security to the designated person complete all health and safety records are updates and procedures well defined 	<p>White/Black board, Markers, computer and projector, trainer’s guide, student handbook, Charts regarding health & hygiene, fire-fighting, first aid, chart of prohibited items,</p>
2	<p>Understand the process of aero engine assembly Theory Duration (hh:mm) 36:00 Practical Duration (hh:mm) 54:00 Corresponding NOS Code AAS/N2001</p>	<p>Candidates will be able to;</p> <ul style="list-style-type: none"> understand all types of drawings, sketches and work instructions at the beginning of the assembly/disassembly understand of geometric dimensions and tolerances understand the rigs, gauges, standard tools, torque wrenches etc. understand the basics of aero engine and its parts understand the various materials, parts and consumables used during assembly/disassembly process understand the criticality of sub-assemblies of an aero engine understand the right assembly/disassembly methodology 	<p>White/Black board/ Chart paper, Markers/Computer and projector, trainer’s guide, student handbook,</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p>and various process parameters like torque application, fitting tolerances, bolting and fastening as mentioned in the work instruction/organisation maintenance manuals</p> <ul style="list-style-type: none"> • understand 5 S related to the work area • while understanding the drawings and sketches, he/she must ensure that the observed problems are highlighted to concerned supervisor • understand the changes which may happen from time to time in assembly/disassembly process based on the approved engine configuration • red flagging of the deviations during the assembly of engine and raising it to concerned supervisor/Quality Inspectors 	
3	<p>Assembly/disassembly of aero-engine Theory Duration (hh:mm) 36:00 Practical Duration (hh:mm) 55:00 Corresponding NOS Code AAS/N2002</p>	<p>Candidates will be able to;</p> <ul style="list-style-type: none"> • receive the modules at the workshop area and perform visual inspection of the modules to identify defects • receive the documentation received with the modules to ensure that all relevant details are filled in the documents as per regulatory/organisational policies and procedures • install the modules on the dis-assembly rig and perform dis-assembly of the modules into piece parts • visually inspect the disassembled piece parts and record the defects observed on the piece parts to ascertain if the defects are within acceptable limits to certify airworthiness of the piece parts • tag the piece parts with the appropriate tags and ensure all relevant information is filled as per regulatory/organisation policy and procedures • dispatch the piece parts to the relevant component shops for inspection and repair as deemed necessary • To be competent, the user/individual on the job must be able to: • receive the components and piece parts from the component shops and perform visual inspection to ensure no defects on the received parts • if any defects found, ensure that the defects are within the airworthiness 	<p>White/Black board, Markers, computer and projector, trainer's guide, student handbook,</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		limits for module assembly <ul style="list-style-type: none"> • inspect and verify the airworthiness tags issued by the component shops and ensure that the tags are in line with regulatory/organisational policies and procedures • install the components and piece parts on the module assembly rig • perform assembly of the module • visually inspect the module post assembly to ensure that there are no defects on the module beyond the airworthiness requirements • issue the documentation and relevant tags for the module and dispatch the module for final engine assembly 	
4	Perform aero-engine module disassembly/assembly Theory Duration (hh:mm) 35:00 Practical Duration (hh:mm) 56:00 Corresponding NOS Code AAS/N2003	Candidates will be able to; <ul style="list-style-type: none"> • perform visual inspection of the bare assembled engine and record the visual findings on the engine • perform fuel and oil draining procedure on the engine prior to disassembly as per the procedures detailed in the job cards/manufacturer manuals/organisation maintenance manuals • remove the engine accessories installed on the engine cases as per the procedures detailed in the job cards/manufacturer manuals/organisation maintenance manuals • perform disassembly of the engine into its modules as per manufacturer manuals and organisation maintenance manuals • ensure blanking is performed on all required areas to prevent an foreign object entering the modules, accessories and LRU's • perform visual inspection of the modules and record the visual findings on the modules • tag the modules with the relevant information as required under regulatory/organisational policies and procedures • dispatch the modules to the appropriate module shops for further disassembly • dispatch the accessories and other LRU's to the respective component shops for testing and repair with appropriate tags • To be competent, the user/individual 	White/Black board/ Chart paper, Markers/Computer and projector, trainer's guide, student handbook,

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p>on the job must be able to:</p> <ul style="list-style-type: none"> • receive the modules from the respective modular shops and perform visual inspection on the modules to certify airworthiness of the modules • inspect the documentation received along with the modules to ensure completeness of the documentation in respect to airworthiness requirements set forth by regulator/organisational policy and procedures • assemble the modules in sequence as detailed in the job card/manufacturer manuals/organisation maintenance manuals • visually inspect the assembled modules to ensure no damage has occurred during assembly. • If any damage found, inspect and verify if the damage is acceptable within the airworthiness limits for engine operations • receive engine accessories and LRU's from the component shops and inspect and verify that the accessories and LRU's are airworthy to be installed on the engine • inspect the documentation received along with the modules to ensure completeness of the documentation in respect to airworthiness requirements set forth by regulator/organisational policy and procedures • install the accessories and LRU's in sequence as detailed in the job card/manufacturer manuals/organisation maintenance manuals • visually inspect the installed accessories and LRU's to ensure no damage has occurred during installation. • If any damage found, inspect and verify if the damage is acceptable within the airworthiness limits for engine operations • dispatch the assembled engine to the engine test cell 	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
5	<p>Prevention of FOD during engine assembly/disassembly Theory Duration (hh:mm) 16:00 Practical Duration (hh:mm) 16:00 Corresponding NOS Code ASC/N2004</p>	<p>Candidates will be able to;</p> <ul style="list-style-type: none"> ensure the availability of blanking, cover etc. at the work place ensure that no FOD is available near the assembly/disassembly area ensure proper availability of tools, fixtures and parts ensure proper accounting of material and tools used during assembly/disassembly ensure all the open cavities are properly blanked/ covered after the completion of work 	<p>White/Black board, Markers, computer and projector, trainer's guide, student handbook,</p>
6	<p>Maintain 5S at the work premises Theory Duration (hh:mm) 09:00 Practical Duration (hh:mm) 23:00 Corresponding NOS Code ASC/N0021</p>	<p>Candidates will be able to;</p> <ul style="list-style-type: none"> 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. ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions follow the technique of waste disposal and waste storage in the proper bins as per SOP segregate the items which are labeled as red tag items for the process area and keep them in the correct places sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions ensure that areas of material storage areas are not overflowing 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 return the extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards follow the proper labeling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists check that the items in the respective 	<p>White/Black board, Markers, computer and projector, trainer's guide, student handbook,</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p>areas have been identified as broken or damaged</p> <ul style="list-style-type: none"> • 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. • make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions • check whether safety glasses are clean and in good condition • keep all outside surfaces of recycling containers are clean • 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 • check whether all hoses, cabling & wires are clean, in good condition and clamped to avoid any mishap or mix up • ensure workbenches and work surfaces are clean and in good condition • follow the cleaning schedule for the lighting system to ensure proper illumination • store the cleaning material and equipment in the correct location and in good condition • ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene • follow the daily cleaning standards and schedules to create a clean working environment • attend all training programs for employees on 5S • support the team during the audit of 5 S • participate actively in employee work groups on 5S and encourage team members for active participation • 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 	
	<p>Compulsory NOS: Total Duration (hh:mm) 384:00 Theory Duration (hh:mm) 157:00 Practical Duration (hh:mm)</p>	<p>Unique equipment used;</p> <ul style="list-style-type: none"> • Cut-out model of a typical aero engine • Ground Power Unit (GPU) • Fire extinguisher • Aircraft engine hoists 	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	227:00	<ul style="list-style-type: none"> Slings for engine Video/2D or 3D software based audio-visual training package Common & special tool kits Common & special gauges and testers Common & special cranes Fork lift, special high lift equipment personal protective equipment (PPE) (consisting of safety jacket, safety goggles, ear plugs, gloves, safety shoes & safety helmet) 	

Optional NOS :

OPTIONS (Optional to choose any or all or none)

OPTION 1: Performing aerospace welding operations

7	<p>Performing aerospace welding operations Total Duration (hh:mm) 192:00 Theory Duration (hh:mm) 81:00 Practical Duration (hh:mm) 111:00 Corresponding NOS Code AAS/N0831</p>	<p>Candidates will be able to;</p> <ul style="list-style-type: none"> ensure wearing of Personnel Protective Equipment (PPE) that suits the task such as flame-resistant aprons, safety helmet & hand shields, ear plugs, footwear, safety goggles etc. comply with organisations Occupational Health & Safety (OHS) standards ensure that work area around the welding transformer, gas discharge unit, flux wire are clean as mentioned in the work instruction / Standard Operating Procedure (SOP) of organisation ensure that the welding work area is not around explosives or ignitable material and adequate ventilation is available for exhaust of fumes and gases check for correctness of power, coolant and operating parts of the machine escalate any queries to the supervisor ensure that the required welding material (electrodes, flux wire etc) is issued from the stores setup welding equipment as per selected welding process or approved Welding Procedure Specification (WPS) and Procedure Qualification Records (PQR) ensure work piece / test piece are clean from burrs prepare the edge of work piece / test piece as per the approved drawing specification and welding procedures 	<p>White/Black board, Markers, computer and projector, trainer's guide, student handbook,</p>
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Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> • ensure appropriate clamps, jigs and fixtures are available to hold the work piece / test piece to be welded • select appropriate wire / electrode as per engineering drawings, type of welding joints or approved WPS & PQR • select appropriate gas, pressure, amperage and voltage as per approved WPS & PQR • perform the required welding process / technique on a test coupon as per approved WPS and PQR in the presence of supervisor, client or under supervision of third party approver • get the test coupon approval for welding positions from supervisor, client or by third party approver • assist supervisor in maintaining a log book with name, approved certificate no., approved welding position etc. • select appropriate wire / electrode as per engineering drawings, type of welding joints or approved WPS & PQR • select appropriate gas, pressure, amperage and voltage as per approved WPS & PQR • register the work piece / section to be welded to the shop supervisor • understand the fabrication tolerances, root gap, hot pass margins as per the welding specification and approved WPS & PQR for type of weld joint • perform tag welding to the work piece and obtain approval from supervisor • perform full weld as per WPS & PQR and avoid over welding • finish the surface by filing, brushing etc. • inform supervisor about completion and perform self-check of the finished output and send it for the next process as per instructions 	
		<p>Unique equipment used;</p> <ul style="list-style-type: none"> • Gas cylinder • Safety gages (gloves, apron, goggles, nose mask & ear plugs) • Welding helmets • TIG welding machine, with foot pedal • Special Tool Kit • Mechanical tool box • Welding material (Inconel & SS321) • Fillet 	



Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> Power Stabilizer 	
	<p>Grand Total Duration</p> <p>Minimum Duration for the QP= <u>384 hrs</u> Theory: <u>157 hrs</u> Practical: <u>227 hrs</u></p> <p>Maximum Duration for the QP= <u>576 hrs</u> Theory: <u>238 hrs</u> Practical: <u>338 hrs</u></p>		

Grand Total Course Duration (Minimum): 384 Hours, 0 Minutes

Grand Total Course Duration (Maximum): 576 Hours, 0 Minutes

This syllabus/ curriculum has been approved by Aerospace and Aviation Sector Skill Council (AASSC)

Trainer Prerequisites for Job role: “Aircraft Powerplant Technician (Aerospace Welder)” mapped to Qualification Pack: “AAS/Q2001”

Sl. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “AAS/Q2001”.
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	Diploma
4a	Domain Certification	Statutory Certificate from Aerospace and Aviation Sector Skill Council (AASCC) for Job Role: “ <u>Aircraft Powerplant Technician (Aerospace Welder)</u> ” mapped to QP: “ <u>AAS/Q2001</u> ”. 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	Aircraft Powerplant Technician
Qualification Pack	AAS/Q2001
Sector Skill Council	Aerospace and Aviation Sector Skill Council

Sl. 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	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).
5	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
6	To pass the Qualification Pack , every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
7	In case of <i>unsuccessful completion</i> , the trainee may seek reassessment on the Qualification Pack.

Compulsory NOS		Marks Allocation			
Total Marks: 670		Total Marks	Out of	Theory	Skills Practical
Assessment outcomes	Assessment Criteria for outcomes				
1. AAS/N0502 Follow safety and security procedures	PC 1. comply with the organisation's safety and security policies and procedures	100	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 ti 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
		Total	100	52	48
2. AAS/N2001 Understand the process of aero-engine assembly/disassembly	PC1. understand all types of drawings, sketches and work instructions at the beginning of the assembly	100	10	4	6
	PC2. understand of geometric dimensions and tolerances		10	4	6
	PC3. understand the rigs, gauges, standard tools, torque wrenches etc.		10	4	6
	PC4. understand the basics of aero engine and its parts		10	4	6
	PC5. understand the various materials, parts and consumables used during assembly process		10	4	6
	PC6. understand the criticality of sub-assemblies during assembly of engine		10	4	6
	PC7. understand the right assembly methodology and various assembling process parameters like torque application, fitting tolerances, bolting and fastening as mentioned work instruction/SOP manual		10	4	6
	PC8. understand 5 S related to the work area		5	2	3
	PC9. while understanding the drawings and sketches, must ensure the observed problems are highlighted to concerned supervisor		5	2	3
	PC10. understand the changes which may happen from time to time in assembly process based on the approved engine configuration		10	4	6
	PC11. red flagging of the deviations during the assembly of engine and raising it to concerned supervisor/Quality Inspectors		10	4	6
		Total	100	40	60
Marks Allocation					
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out of	Theory	Skills Practical
3. AAS/N2002 Assembly/disassembly of aero-engine	PC1. perform visual inspection of the bare assembled engine and record the visual findings on the engine	100	5	2	3
	PC2. perform fuel and oil draining procedure on the engine prior to disassembly as per the procedures detailed in the job cards/manufacturer manuals/organisation maintenance manuals		5	2	3

PC3.	remove the engine accessories installed on the engine cases as per the procedures detailed in the job cards/manufacturer manuals/organisation maintenance manuals	5	2	3
PC4.	perform disassembly of the engine into its modules as per manufacturer manuals and organisation maintenance manuals	5	2	3
PC5.	ensure blanking is performed on all required areas to prevent a foreign object entering the modules, accessories and LRU's	5	2	3
PC6.	perform visual inspection of the modules and record the visual findings on the modules	5	2	3
PC7.	tag the modules with the relevant information as required under regulatory/organisational policies and procedures	5	2	3
PC8.	dispatch the modules to the appropriate module shops for further disassembly	5	2	3
PC9.	dispatch the accessories and other LRU's to the respective component shops for testing and repair with appropriate tags	5	2	3
PC10.	receive the modules from the respective modular shops and perform visual inspection on the modules to certify airworthiness of the modules	5	2	3
PC11.	inspect the documentation received along with the modules to ensure completeness of the documentation in respect to airworthiness requirements set forth by regulator/organisational policy and procedures	5	2	3
PC12.	assemble the modules in sequence as detailed in the job card/manufacturer manuals/organisation maintenance manuals	5	2	3
PC13.	visually inspect the assembled modules to ensure no damage has occurred during assembly.	5	2	3
PC14.	inspect and verify if any damage found is acceptable within the airworthiness limits for engine operations	5	2	3
PC15.	receive engine accessories and LRU's from the component shops and inspect and verify that the accessories and LRU's are airworthy to be installed on the engine	5	2	3
PC16.	inspect the documentation received along with the modules to ensure completeness of the documentation in respect to airworthiness requirements set forth by regulator/organisational policy and procedures	5	2	3
PC17.	install the accessories and LRU's in sequence as detailed in the job card/manufacturer manuals/organisation maintenance manuals	5	2	3

	PC18. visually inspect the installed accessories and LRU's to ensure no damage has occurred during installation.		5	2	3
	PC19. If any damage found, inspect and verify if the damage is acceptable within the airworthiness limits for engine operations		5	2	3
	PC20. dispatch the assembled engine to the engine test cell		5	2	3
		Total	100	40	60

Assessment outcomes	Assessment Criteria for outcomes	Marks Allocation			
		Total Marks	Out of	Theory	Skills Practical
4. AAS/N2003 Perform aero-engine module disassembly/assembly	PC1. receive the modules at the workshop area and perform visual inspection of the modules to identify defects	100	8	3	5
	PC2. receive the documentation received with the modules to ensure that all relevant details are filled in the documents as per regulatory/organisational policies and procedures		8	3	5
	PC3. install the modules on the disassembly rig and perform disassembly of the modules into piece parts		8	3	5
	PC4. visually inspect the disassembled piece parts and record the defects observed on the piece parts to ascertain if the defects are within acceptable limits to certify airworthiness of the piece parts		8	3	5
	PC5. tag the piece parts with the appropriate tags and ensure all relevant information is filled as per regulatory/organisation policy and procedures		8	3	5
	PC6. dispatch the piece parts to the relevant component shops for inspection and repair as deemed necessary		8	3	5
	PC7. receive the components and piece parts from the component shops and perform visual inspection to ensure no defects on the received parts		8	3	5
	PC8. ensure that defects, if any, are within the airworthiness limits for module assembly		8	3	5
	PC9. inspect and verify the airworthiness tags issued by the component shops and ensure that the tags are in line with regulatory/organisational policies and procedures		8	3	5
	PC10. install the components and piece parts on the module assembly rig		7	3	4
	PC11. perform assembly of the module		7	3	4
	PC12. visually inspect the module post assembly to ensure that there are no defects on the		7	3	4

	module beyond the airworthiness requirements				
	PC13. issue the documentation and relevant tags for the module and dispatch the module for final engine assembly		7	3	4
		Total	100	39	61
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out of	Theory	Skills Practical
5. AAS/N2004 Prevent FOD during engine assembly/disassembly	PC1. ensure the availability of blanking, cover etc. at the work place	100	20	10	10
	PC2. ensure that no FOD is available near the assembly/disassembly area		20	10	10
	PC3. ensure proper availability of tools, fixtures and parts		20	10	10
	PC4. ensure proper accounting of material and tools used during assembly/disassembly		20	10	10
	PC5. ensure all the open cavities are properly blanked/ covered after the completion of work		20	10	10
		Total	100	50	50
6. ASC/N0021 Maintain 5s at the work premises	PC1. follow the sorting process and check that the tools, fixtures and jigs that are lying on workstations are the ones in use and unnecessary items are not cluttering the workbenches or work surfaces	170	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		30	10	20
	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. lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc.	30	10	20
	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			
	PC25. participate actively in employee work groups on 5S and encourage team members for active participation	30	10	20
	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			
	Total	170	50	120

Options Option 1: Aerospace Welder Total Marks: 100		Marks Allocation			
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out of	Theory	Skills Practical
1.1. AAS/ N0831 Perform aerospace welding operations	PC1. wear Personnel Protective Equipment (PPE) that suits the task such as flame-resistant aprons, safety helmet and hand shields, ear plugs, footwears, safety goggles etc	100	8	4	4
	PC2. comply with organisations Occupational Health and Safety (OHS) standards		8	4	4
	PC3. ensure that work area around the welding transformer, gas discharge unit, flux wire are clean as mentioned in the work instruction / Standard Operating Procedure (SOP) of organisation		5	2	3
	PC4. ensure that the welding work area is not around explosives or ignitable material and adequate ventilation is available for exhaust of fumes and gases		5	2	3
	PC5. check for correctness of power, coolant and operating parts of the machine		5	2	3
	PC6. escalate any queries to the supervisor		5	2	3
	PC7. ensure that the required welding material (electrodes, flux wire etc) is issued from the stores		5	2	3
	PC8. setup welding equipment as per selected welding process or approved Welding Procedure Specification (WPS) and Procedure Qualification Records (PQR)		5	2	3
	PC9. ensure work piece / test piece are clean from burrs		5	2	3
	PC10. prepare the edge of work piece / test piece as per the approved drawing specification and welding procedures		5	2	3
	PC11. ensure appropriate clamps, jigs and fixtures are available to hold the work piece / test piece to be welded		5	2	3
	PC12. select appropriate wire / electrode as per engineering drawings, type of welding joints or approved WPS and PQR		5	2	3
	PC13. select appropriate gas, pressure, amperage and voltage as per approved WPS and PQR		5	2	3
	PC14. perform the required welding process / technique on a test coupon as per approved WPS and PQR in the presence of		5	2	3

	supervisor, client or under supervision of third party approver				
	PC15. get the test coupon approval for welding positions from supervisor, client or by third party approver				
	PC16. assist supervisor in maintaining a log book with name, approved certificate number approved welding position etc.,		5	2	3
	PC17. select appropriate wire / electrode as per engineering drawings, type of welding joints or approved WPS and PQR		5	2	3
	PC18. select appropriate gas, pressure, amperage and voltage as per approved WPS and PQR		5	2	3
	PC19. register the workpiece / section to be welded to the shop supervisor		5	2	3
	PC20. understand the fabrication tolerances, root gap, hot pass margins as per the welding specification and approved WPS and PQR for type of weld joint		4	2	2
	PC21. perform tag welding to the work piece and obtain approval from supervisor		4	2	2
	PC22. perform full weld as per WPS and PQR and avoid over welding		4	2	2
	PC23. finish the surface by filing, brushing etc.,		4	2	2
	PC24. inform supervisor about completion and perform self check of the finished output and send it for the next process as per instructions		4	2	2
		Total	100	42	58
	Grand Total (Marks)		770	313	457
	Percentage Weightage (%)			41	59