Model Curriculum

Technical Services Engineer

SECTOR: AEROSPACE AND AVIATION
SUB-SECTOR: MAINTENANCE AND REPAIR ORGANISATION
OCCUPATION: TECHNICAL SERVICES
REF ID: AAS/Q2101
NSQF LEVEL: 5

Skill India

Aerospace & Aviation Sector Skill Council

N·S·D·C National Skill Development Corporation

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 : '**Technical Services Engineer**' QP No. '**AAS/Q2101**' **NSQF level 5**'

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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Technical Services Engineer

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a "Technical Services Engineer", in the "Aerospace & Aviation" Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	Technical Services Engineer		
Qualification Pack Name & Reference ID.	AAS/Q2101		
Version No.	1.0	Version Update Date	15 – 03 - 2017
Pre-requisites to Training	Graduate (B.E/BTech)		
Training Outcomes	After completing this programme, participants will be able to; • Assist the Marketing Department in analysing major engineering projects for future contracts. • Maintain and control of contracted customers • Maintain and control maintenance schedules • Control and distribution of all technical information received by Airline/MRO • Establish technical standards for maintenance, repair and overhaul of aircraft structures, engines and components etc. • Identify and use basic tools, equipment & materials; Understanding of carrying out tool box, machinery equipment for its operation. • Achieve basic communication skills and good inter-personal skills. • Acquire abilities to stand and walk for long periods of time consistent kneeling, squatting and reaching above the head with caution to avoid accidents. • Work under pressure and to deadlines. • Take clear-cut decisions, have good mathematical ability, and will be able to work well in a team.		

This course encompasses 2 out of 2 National Occupational Standards (NOS) of "Technical Services Engineer" Qualification Pack issued by "Aerospace & Aviation Sector Skill Council (AASSC)".

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	**Follow safety and security procedures** **Theory Duration** (hh:mm) **25:00** **Practical Duration** (hh:mm) **23:00** **Corresponding NOS Code** **AAS/N0502**	Candidates will be able to; • 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	White/Black board, Markers, computer and projector, trainer's guide, student handbook,
2	**Provide technical services to the maintenance team** **Theory Duration** (hh:mm) **155:00** **Practical Duration** (hh:mm) **181:00** **Corresponding NOS Code** **AAS/N2101**	Candidates will be able to; • set the Technical Standards of all aircraft operated by Contracted customers • the technical support of all aircraft being maintained by airline/MRO • liaising with aircraft manufactures vendors, overhaul agencies and other airlines on behalf of Contracted customers and airline/MRO Departments to achieve its objective • providing technical support to all departments in airline/MRO, and all it's Contracted customers and to design facilities, access equipment, test stands etc. • assisting the Marketing Department in analysing major engineering projects for future contracts • the maintenance and control of Contracted customers' Maintenance	White/Black board/ Chart paper, Markers/Computer and projector, trainer's guide, student handbook

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		Schedules • the control and distribution of all technical information received by airline/MRO • optimizing maintenance and overhaul costs of all Contracted customers, airborne equipment and servicing/overhaul equipment whilst meeting airworthiness standard • establishing technical standards for maintenance, repair and overhaul of aircraft structures, engines and components. • giving guidance to other airline/MRO departments on all matters relating to maintenance, repair, overhaul, replacement and modification of aircraft and equipment, including purchase of new equipment • maintaining regular contact with all Technical departments in airline/MRO, Contracted customers' flight Operations, Customer Services Departments etc. • maintain and develop contacts with aircraft and component manufacturers and overhaul/ maintenance agencies. • evaluating technical requirements of major projects as requested by Contracted customers • supporting Contracted customers' Condition Monitoring Programme • processing all applicable technical documents and literature through the Technical Publications Systems • supporting the Contracted customers maintenance programmes by attendance at various meetings • attending conferences, workshops etc. as necessary to remain abreast of technical advances in the aviation field with respect to Contracted customers' aircraft • initiating of modification to improve performance and reliability and reduce costs of maintenance and overhaul, without compromising airworthiness standards • assessment and evaluation of manufactures and regulatory authorities technical data and recommend appropriate action to meet the above objectives. Negotiating with manufacturers as necessary, and reproducing manufacturers Service Bulletins or	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		other technical literature as airline/MRO Documentation • raise in-house modifications and repair schemes etc. including any specialized tools or equipment required • assist all Contracted customers Operations Dept. in all technical matters, including amendments to the Minimum Equipment List and the Operations Manual/Aircraft Flight Manual. Liaise with them on changes and modifications to aircraft and procedures • investigate incidents and accidents (ASR), initiate follow up action as required. Investigate component and system and system failure and initiate follow up remedial action as requested by QA • approve within the scope of delegated authority or raise for approval by the regulatory authorities technical drawings of modifications and repair schemes for aircraft structures/ engines or components, design deviations on aircraft/ engines, components, parts etc., which are outside the defined manual limits but are considered safe to operate	
	Total Duration **Theory Duration** (hh:mm) **180:00** **Practical Duration** (hh:mm) **204:00**	Unique equipment used; • Video/2D or 3D software based audio-visual training package • personal protective equipment (PPE) (consisting of safety jacket, safety goggles, ear plugs, gloves, safety shoes & safety helmet) • Fire extinguisher • Walkie-talkie	

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

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

Trainer Prerequisites for Job role: "Technical Services Engineer" mapped to Qualification Pack: "AAS/Q2101"

Sl. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack "AAS/Q2101".
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 (B.E/BTech)
4a	Domain Certification	Statutory Certificate from Aerospace & Aviation Sector Skill Council (AASSC) for Job Role: "Technical Services Engineer" mapped to QP: "AAS/Q2101". 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

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role: Technical Services Engineer
Qualification Pack: AAS/Q2101
Sector Skill Council: Aerospace and Aviation Sector Skill Council

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 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 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

		Marks Allocation			
Assessment outcomes	**Assessment Criteria for outcomes**	**Total Marks**	**Out of**	**Theory**	**Skills Practical**
1. **AAS/N0502 Follow safety and security procedures**	PC 1. comply with the organization'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 organization) 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 organizational procedures and regulatory guidelines		20	10	10
	PC 7. follow organization'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. ensure all health and safety records are updated and procedures well defined		5	2	3
		Total	**100**	**52**	**48**

		Marks Allocation			
Assessment outcomes	**Assessment Criteria for outcomes**	**Total Marks**	**Out of**	**Theory**	**Skills Practical**
2. AAS/N2101 Provide technical services to the maintenance team	PC1. compile the Technical Standards of all aircraft operated by Contracted customers	**100**	5	2	3
	PC2. Provide the technical support of all aircraft being maintained by airline/MRO		5	2	3
	PC3. liaise with aircraft manufactures vendors, overhaul agencies and other airlines on behalf of Contracted customers and airline/MRO Departments to achieve its objective		5	2	3
	PC4. provide technical support to all departments in airline/MRO, and all it's Contracted customers and to design facilities, access equipment, test stands etc.		5	2	3
	PC5. assist the Marketing Department in analysing major engineering projects for future contracts		5	2	3
	PC6. undertake the maintenance and control of Contracted customers' Maintenance Schedules		5	2	3
	PC7. undertake the control and distribution of all technical information received by airline/MRO		5	2	3
	PC8. optimize maintenance and overhaul costs of all Contracted customers, airborne equipment and servicing/ overhaul equipment whilst meeting airworthiness standard		5	2	3
	PC9. establish technical standards for maintenance, repair and overhaul of aircraft structures, engines and components		4	2	2
	PC10. provide guidance to other airline/MRO departments on all matters relating to maintenance, repair, overhaul, replacement and modification of aircraft and equipment, including purchase of new equipment		4	2	2
	PC11. maintain regular contact with all Technical departments in airline/MRO, Contracted customers' flight Operations, Customer Services Departments etc.		4	2	2
	PC12. maintain and develop contacts with aircraft and component manufacturers and overhaul/ maintenance agencies		4	2	2

	PC13. evaluate technical requirements of major projects as requested by Contracted customers		4	2	2
	PC14. support Contracted customers' Condition Monitoring Programme		4	2	2
	PC15. process all applicable technical documents and literature through the Technical Publications Systems		4	2	2
	PC16. support the Contracted customers maintenance programmes by attendance at various meetings		4	2	2
	PC17. attend conferences, workshops etc. as necessary to remain abreast of technical advances in the aviation field with respect to Contracted customers' aircraft		4	2	2
	PC18. initiate of modification to improve performance and reliability and reduce costs of maintenance and overhaul, without compromising airworthiness standards		4	2	2
	PC19. assess and evaluate manufacturers' and regulatory authorities' technical data and recommend appropriate action to meet the above objectives. Negotiating with manufacturers' as necessary, and reproducing manufacturers Service Bulletins or other technical literature as airline/MRO Documentation		4	2	2
	PC20. raise in-house modifications and repair schemes etc. including any specialized tools or equipment required		4	2	2
	PC21. assist all Contracted customers Operations Dept. in all technical matters, including amendments to the Minimum Equipment List and the Operations Manual/ Aircraft Flight Manual. Liaise with them on changes and modifications to aircraft and procedures		4	2	2
	PC22. investigate incidents and accidents (ASR), initiate follow up action as required. Investigate component and system and system failure and initiate follow up remedial action as requested by QA		4	2	2
	PC23. approve within the scope of delegated authority or raise for approval by the regulatory authorities technical drawings of modifications and repair schemes for aircraft structures/ engines or components, design deviations on aircraft/ engines, components, parts etc., which are outside the defined manual limits but are considered safe to operate		4	2	2
		Total	**100**	**46**	**54**