
Model Curriculum

Design Engineer Aerospace Systems Integrator

SECTOR: AEROSPACE AND AVIATION
SUB-SECTOR: DESIGN AND DEVELOPMENT
OCCUPATION: AEROSPACE DESIGN/R&D
REF ID: AAS/Q3104, V1.0
NSQF LEVEL: 7



Certificate

**CURRICULUM COMPLIANCE TO
QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS**
is hereby issued by the

AEROSPACE & AVIATION SECTOR SKILL COUNCIL (AASCC)

for the

MODEL CURRICULUM

Complying to National Occupational Standards of

Job Role/Qualification Pack : **Design Engineer Aerospace Systems Integrator** QP No. **'AAS/Q3104' NSQF level 7**

Date of issuance : 22 December 2017
Valid up to : 21 December 2018
* Valid up to the next review date of the Qualification Pack



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

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Design Engineer Aerospace Systems Integrator

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Design Engineer Aerospace Systems Integrator” in the “Aerospace and Aviation” Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	Design Engineer Aerospace Systems Integrator		
Qualification Pack Name & Reference ID.	AAS/Q3104		
Version No.	1.0	Version Update Date	10 – 11 - 2017
Pre-requisites to Training	Pursuing final year Bachelor's degree (for training purpose) Bachelor's Degree in Mechanical / Aeronautical / Electrical / Electronics and allied engineering branches.		
Training Outcomes	<p>After completing this programme, participants will be able to</p> <ul style="list-style-type: none"> • provide direction to the technical team with respect to flow down of system requirements • oversees investigations and analysis • oversees integration of system elements with the system • accept all engineering responsibilities for a particular application • interface with customers (government and commercial), program office, operations, and internal support groups as required. • Achieve basic communication skills and good inter-personal skills. • Work well in a team 		

This course encompasses 4 out of 4 National Occupational Standards (NOS) of “Design Engineer Aerospace Systems Integrator” Qualification Pack issued by “Aerospace and Aviation Sector Skill Council (AASCC)”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Create documents for knowledge sharing Theory Duration (hh:mm) 12:00 Practical Duration (hh:mm) 36:00 Corresponding NOS Code SSC/N0703	Candidates will be able to <ul style="list-style-type: none"> • establish with appropriate people the purpose, scope, formats and target audience for the documents • access existing documents, language standards, templates and documentation tools from the organization’s knowledge base • liaise with appropriate people to obtain and verify the information required for the documents • confirm the content and structure of the documents with appropriate people • create documents using standard templates and agreed language standards • review documents with appropriate people and incorporate their inputs • submit documents for approval by appropriate people • publish documents in agreed formats • update the organization’s knowledge base with the documents • comply with the organization’s policies, procedures and guidelines when creating documents for knowledge sharing 	
2	Design, co-ordinate and integrate between various entities involved in design and development Theory Duration (hh:mm) 215:00 Practical Duration (hh:mm) 233:00 Corresponding NOS Code AAS/N3104	Candidates will be able to <ul style="list-style-type: none"> • collect/gather information related to systems to be integrated, specifications, layouts etc. • understand the specifications and general arrangement drawing of product being developed • define technical objectives design verification & validation • analyse, plan and execute draft design for various systems required in product development • establish, maintain, and execute product level plans • document and maintain the basis of 	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p>system calculations and selection of appropriate products</p> <ul style="list-style-type: none"> • obtain approvals from appropriate design authority • assist in raising purchase requisitions for the approved products and release manufacturing drawings based on approved design • undertake development testing, verification and lifecycle documentation • conform to configuration management and change control procedures and policies • conduct/participate in design reviews and customer audits • effectively communicate with all levels of the organisation 	
3	<p>Work Effectively in a Team Theory Duration (hh:mm) 14:00 Practical Duration (hh:mm) 18:00 Corresponding NOS Code AAS/N0503</p>	<p>Candidates will be able to</p> <ul style="list-style-type: none"> • display courteous and helpful behaviour at all times • take opportunities to enhance the level of assistance offered to colleagues • meet all reasonable requests for assistance within acceptable workplace timeframes • complete allocated tasks as required • seek assistance when difficulties arise • use questioning techniques to clarify instructions or responsibilities • identify and display a non - discriminatory attitude in all contacts with customers and other staff members • observe appropriate dress code and presentation as required by the workplace, job role and level of customer contact • follow personal hygiene procedures according to organisational policy and relevant legislation • interpret, confirm and act on workplace information, instructions and procedures relevant to the particular task • interpret, confirm and act on legal requirements in regard to anti-discrimination, sexual harassment and bullying • ask questions to seek and clarify workplace information 	<p>White/Black board/ Chart paper, Markers/Computer and projector, trainer's guide, student handbook, video film demonstrating typical questioning techniques</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> plan and organise daily work routine within the scope of the job role prioritise and complete tasks according to required timeframes identify work and personal priorities and achieve a balance between competing priorities 	
4	<p>Maintain organisational safety and information security Theory Duration (hh:mm) 24:00 Practical Duration (hh:mm) 24:00 Corresponding NOS Code AAS/N0502</p>	<p>Candidates will be able to</p> <ul style="list-style-type: none"> comply with the organization's IT policies and procedures for safety of data and information adhere to the organisation's policies pertaining to accesses granted, usage, modification of any information or recording or destruction of information report any identified breaches of data or information in any form to the authority as described by the organization report any theft of intellectual property according to the organisation policy record, control the document version and take appropriate approvals for the documents, plans or drawings according to organisational hierarchy follow your organization's safety procedures at workplace and act promptly, calmly, and efficiently in case of disruption recommend improvement related to safety and security at the workplace comply to any health and safety requirements set by an organisation 	<p>White/Black board/ Chart paper, Markers/Computer and projector, trainer's guide, student handbook, Charts regarding health & hygiene, fire-fighting, first aid, chart of prohibited items, chart of parking layout, traffic markings, video content demonstrating safety & security procedures.</p>
	<p>Total Duration Theory Duration (hh:mm) 265:00 Practical Duration (hh:mm) 311:00</p>	<p>Unique equipment used</p> <ul style="list-style-type: none"> 2D/3D CAD software PLM Software Project management software tools 	

Grand Total Course Duration: 576 Hours, 0 Minutes

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

Trainer Prerequisites for Job role: “Design Engineer Aerospace Systems Integrator” mapped to Qualification Pack: “AAS/Q3104”

Sl. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “AAS/Q3104”.
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/Bachelor degree in Mechanical / Aeronautical / Electrical / Electronics and allied engineering branches.
4a	Domain Certification	Statutory Certificate from Aerospace and Aviation Sector Skill Council (AASSC) for Job Role: “ <u>Design Engineer Aerospace Systems Integrator</u> ” mapped to QP: “AAS/Q3104”. 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	10 yrs for Diploma/5 yrs for Bachelor degree holder.

Annexure : Assessment Criteria

Job Role : Design Engineer Aerospace Systems Integrator

Qualification Pack : AAS/Q3104

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. 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 centre 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 unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Compulsory NOS Total Marks: 100		Marks Allocation			
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out of	Theory	Skills Practical
1. SSC/N0703 Create documents for knowledge sharing	PC1. establish with appropriate people the purpose, scope, formats and target audience for the documents	100	5	5	0
	PC2. access existing documents, language standards, templates and documentation tools from your organization's knowledge base		15	0	15
	PC3. liaise with appropriate people to obtain and verify the information required for the documents		5	5	0
	PC4. confirm the content and structure of the documents with appropriate people		10	0	10
	PC5. create documents using standard templates and agreed language standards		25	0	25
	PC6. review documents with appropriate people and incorporate their inputs		10	0	10

	PC7. submit documents for approval by appropriate people		5	5	0
	PC8. publish documents in agreed formats		5	5	0
	PC9. update your organization's knowledge base with the documents		5	5	0
	PC10. comply with your organization's policies, procedures and guidelines when creating documents for knowledge sharing		15	0	15
Total			100	25	75

Compulsory NOS Total Marks: 100		Marks Allocation			
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out of	Theory	Skills Practical
2. AAS/N3104 design, co-ordinate and integrate between various entities involved in design and development	PC1. collect/gather information related to systems to be integrated, specifications, layouts etc.	100	9	4	5
	PC2. understand the specifications and general arrangement drawing of product being developed		9	4	5
	PC3. define technical objectives design verification & validation		9	4	5
	PC4. analyse, plan and execute draft design for various systems required in product development		9	4	5
	PC5. establish, maintain, and execute product level plans		8	4	4
	PC6. document and maintain the basis of system calculations and selection of appropriate products		8	4	4
	PC7. obtain approvals from appropriate design authority in-charge		8	4	4
	PC8. raise purchase requisitions for the approved products and release manufacturing drawings based on approved design		8	4	4
	PC9. undertake development testing, verification and lifecycle documentation		8	4	4
	PC10. conform to configuration management and change control procedures and policies		8	4	4
	PC11. conduct/participate in design reviews and customer audits		8	4	4
	PC12. effectively communicate with all levels of the organization		8	4	4
Total			100	48	52

Compulsory NOS Total Marks: 100		Marks Allocation			
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out of	Theory	
				Practical	Skills
3. AAS/N0503 Work Effectively in a Team	PC1. display courteous and helpful behaviour at all times	100	6	3	3
	PC2. take opportunities to enhance the level of assistance offered to colleagues		7	3	4
	PC3. meet all reasonable requests for assistance within acceptable workplace timeframes		6	3	3
	PC4. complete allocated tasks as required		6	3	3
	PC5. seek assistance when difficulties arise		7	3	4
	PC6. use questioning techniques to clarify instructions or responsibilities		6	3	3
	PC7. identify and display a non-discriminatory attitude in all contacts with customers and other staff members		6	3	3
	PC8. observe appropriate dress code and presentation as required by the workplace, job role and level of customer contact		7	3	4
	PC9. follow personal hygiene procedures according to organisational policy and relevant legislation		7	3	4
	PC10. interpret, confirm and act on workplace information, instructions and procedures relevant to the particular task		7	3	4
	PC11. interpret, confirm and act on legal requirements in regard to anti-discrimination, sexual harassment and bullying		7	3	4
	PC12. ask questions to seek and clarify workplace information		7	3	4
	PC13. plan and organise daily work routine within the scope of the job role		7	3	4
	PC14. prioritise and complete tasks according to required timeframes		7	3	4
	PC15. identify work and personal priorities and achieve a balance between competing priorities		7	3	4
Total			100	45	55

Compulsory NOS Total Marks: 100	Marks Allocation
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Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out of	Theory	Skills Practical
4. AAS/N3201 Maintain organisational safety and information security	PC1. comply with your organization's IT policies and procedures for safety of data and	100	10	5	5
	PC2. adhere to the organisation's policies pertaining to accesses granted, usage, modification of any information or recording or destruction of information		10	5	5
	PC3. report any identified breaches of data or information in any form to the authority as described by the organisation.		10	5	5
	PC4. report any theft of intellectual property according to the organisation policy		20	10	10
	PC5. record, control the document version and take appropriate approvals for the documents, plans or drawings according to organisational hierarchy		10	5	5
	PC6. follow your organization's safety procedures at workplace and act promptly, calmly, and efficiently in case of disruption		20	10	10
	PC7. recommend improvement related to safety and security at the workplace		10	5	5
	PC8. comply to any health and safety requirements set by an organisation		10	5	5
Total			100	50	50