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Model Curriculum

Associate Analytics

SECTOR: **IT-ITES**
SUB-SECTOR: **BUSINESS PROCESS MANAGEMENT**
OCCUPATION: **ANALYTICS**
REF. ID: **SSC/Q2101, VERSION 1.0**
NSQF LEVEL: **7**

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Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

IT-ITES SECTOR SKILLS COUNCIL NASSCOM

for the

MODEL CURRICULUM

Complying to National Occupational Standards of
Job Role/Qualification Pack: 'Associate Analytics' QP No. 'SSC/Q2101 NSQF Level 7'

Date of Issuance: December 31ˢᵗ, 2015

Valid up to*:   December 31ˢᵗ, 2016

* Valid up to the next review date of the Qualification Pack
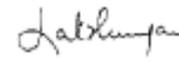
Authorised Signatory
Lakshmi Narayan
(Chairman, IT-ITeS Sector Skills Council NASSCOM)

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Associate Analytics

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of Associate Analytics in the IT-ITeS Sector/Industry and aims at building the following key competencies in the learner.

Program Name	Associate Analytics		
Qualification Pack Name & Reference ID.	Associate Analytics SSC/Q2101, version 1.0		
Version No.	1.0	**Version Update Date**	31/12/2015
Pre-requisites to Training	Bachelor's Degree in Statistics/ Science/Technology/ Mathematics or any other course		
Training Outcomes	**After completing this programme, participants will be able to:** • Carry out rule-based statistical analysis • Create documents for knowledge sharing • Manage their work to meet requirements • Work effectively with colleagues • Maintain a healthy, safe and secure working environment • Provide data/information in standard formats • Develop their knowledge, skills and competence		

The Course encompasses all <u>seven</u> National Occupational Standards (NOS) of Associate Analytics Qualification Pack issued by IT-ITeS Sector Skills Council NASSCOM.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	**Introduction to Analytics and R programming** **Theory Duration** (hh:mm) 15:00 **Practical Duration** (hh:mm) 60:00 **Corresponding NOS Code** SSC/N2101	Candidates will be able to: • Obtain and structure data using standard templates and tools • Validate data accurately and identify anomalies • Carry out rule-based analysis of the data in line with the analysis plan • Validate the results of their analysis according to statistical guidelines • Draw justifiable inferences from their analysis	Refer to Unique Equipment Required Section
2	**Predictive Analytics** **Theory Duration** (hh:mm) 20:00 **Practical Duration** (hh:mm) 55:00 **Corresponding NOS Code** SSC/N2101	Candidates will be able to: • Establish clearly the objectives and scope of the analysis • Obtain guidance from appropriate people to identify suitable data sources to agree the methodological approach • Obtain and structure data using standard templates and tools • Validate data accurately and identify anomalies • Obtain guidance from appropriate people on how to handle anomalies in data • Carry out rule-based analysis of the data in line with the analysis plan • Validate the results of their analysis according to statistical guidelines • Review the results of their analysis with appropriate people • Undertake modifications to their analysis based on inputs from appropriate people • Draw justifiable inferences from their analysis • Present the results and inferences from their analysis using standard templates and tools • Comply with their organization's policies, procedures and guidelines when carrying out rule-based quantitative analysis	Refer to Unique Equipment Required Section
3	**Document Creation and Knowledge Sharing** **Theory Duration** (hh:mm) 15:00	Candidates will be able to: • Establish with appropriate people the purpose, scope, formats and target audience for the documents • Access existing documents, language standards, templates and documentation tools from their organization's knowledge base	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Practical Duration (hh:mm) 35:00 **Corresponding NOS Code** SSC/N0703	• 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 their organization's knowledge base with the documents • Comply with their organization's policies, procedures and guidelines when creating documents for knowledge sharing	
4	**Self and work Management** **Theory Duration** (hh:mm) 12:00 **Practical Duration** (hh:mm) 38:00 **Corresponding NOS Code** SSC/N9001	Candidates will be able to: • Establish and agree their work requirements with appropriate people • Keep their immediate work area clean and tidy • utilize their time effectively • Use resources correctly and efficiently • Treat confidential information correctly • Work in line with organization's policies and procedures • Work within the limits of their job role • Obtain guidance from appropriate people, where necessary • Ensure their work meets the agreed requirements	Refer to Unique Equipment Required Section
5	**Team Work and Communication** **Theory Duration** (hh:mm) 12:00 **Practical Duration** (hh:mm) 38:00 **Corresponding NOS Code** SSC/N9002	Candidates will be able to: • Communicate with colleagues clearly, concisely and accurately • Work with colleagues to integrate their work effectively with them • Pass on essential information to colleagues in line with organizational requirements • Work in ways that show respect for colleagues • carry out commitments they have made to colleagues • Let colleagues know in good time if they cannot carry out their commitments, explaining the reasons • Identify any problems they have working with colleagues and take the initiative to solve these problems • Follow the organization's policies and procedures for working with colleagues	Refer to Unique Equipment Required Section

Sr. No.	Module	Key Learning Outcomes	Equipment Required
6	**Managing Health and Safety** **Theory Duration** (hh:mm) 05:00 **Practical Duration** (hh:mm) 20:00 **Corresponding NOS Code** SSC/ N 9003	Candidates will be able to: • Comply with organization's current health, safety and security policies and procedures • Report any identified breaches in health, safety, and security policies and procedures to the designated person • Identify and correct any hazards that they can deal with safely, competently and within the limits of their authority • Report any hazards that they are not competent to deal with to the relevant person in line with organizational procedures and warn other people who may be affected • Follow their organization's emergency procedures promptly, calmly, and efficiently • Identify and recommend opportunities for improving health, safety, and security to the designated person • Complete any health and safety	
7	**Data and Information Management** **Theory Duration** (hh:mm) 15:00 **Practical Duration** (hh:mm) 35:00 **Corresponding NOS Code** SSC/N9004	Candidates will be able to: • Establish and agree with appropriate people the data/information they need to provide, the formats in which they need to provide it, and when they need to provide it • Obtain the data/information from reliable sources • Check that the data/information is accurate, complete and up-to-date • Obtain advice or guidance from appropriate people where there are problems with the data/information • Carry out rule-based analysis of the data/information, if required • Insert the data/information into the agreed formats • Check the accuracy of their work, involving colleagues where required • Report any unresolved anomalies in the data/information to appropriate people • Provide complete, accurate and up-to-date data/information to the appropriate people in the required formats on time	Refer to Unique Equipment Required Section
8	**Learning and Self Development**	Candidates will be able to: • Obtain advice and guidance from appropriate people to develop their knowledge, skills and competence	Refer to Unique Equipment Required Section

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Theory Duration (hh:mm) 05:00 **Practical Duration** (hh:mm) 20:00 **Corresponding NOS Code** SSC/N9005	• Identify accurately the knowledge and skills they need for their job role • Identify accurately their current level of knowledge, skills and competence and any learning and development needs • Agree with appropriate people a plan of learning and development activities to address their learning needs • Undertake learning and development activities in line with their plan • Apply their new knowledge and skills in the workplace, under supervision • Obtain feedback from appropriate people on their knowledge and skills and how effectively they apply them • Review their knowledge, skills and competence regularly and take appropriate action	
	Total Duration: **Theory Duration 99:00** **Practical Duration 301:00**	**Unique Equipment Required**: Training room should be fully furnished with the following equipment / tools / accessories. Additional / specific resources, wherever applicable (e.g. Hardware, software) are indicated in the main text corresponding to relevant learning outcome. **For Domain NOSs:** SSC/N2101: R programming, Python, JAVA, Weka, MS-Excel, NoSQL SSC/N0703: 5. MS-Visio, MS-Projects, Rational Suite/Star UML **General Requirements:** • Comfortable seats with adequate lighting, controlled temperature and acoustics for training and learning • White Board, Markers and Eraser • Projector with screen • Flip chart with markers • Faculty's PC/Laptop with latest configuration and internet connection • Supporting software / applications for projecting audio, video, recording, • Interaction / Presentation Tools to support learning activities: o Intranet o Email o IMs o Learning management system e.g. Moodle, Blackboard to enable blended learning o Conferencing tools – WebEx / Goto Meetings / Lensoo /Any Meetings / Open Meetings • Microphone / voice system for lecture and class activities	

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Sr. No.	Module	Key Learning Outcomes	Equipment Required
		- Handy Camera - Stationery kit – Staples, Glue, Chart Paper, Sketch Pens, Paint Box, Scale, A4 Sheets - For IT Lab sessions: Computer Lab with 1:1 PC: trainee ratio and having internet connection, MS Office / Open office, Browser, Outlook/ other Email Clients, chat tools - Assessment and Test Tools for day to day online Tests and Assessments - For team discussions: Adequate seating arrangement in full / half circle format for one or more teams as per planned team composition. - Reading Resources: Access to relevant sample documents and learning forums to enable self-study before and after each training session. Online material / case studies at - www.kaggle.com, www.coursera.org, www.udacity.com, www.edx.org	

Grand Total Course Duration: 400 Hours 0 Minutes

(This Syllabus/Curriculum has been approved by IT-ITeS Sector Skills Council NASSCOM.)

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Notes from IT-ITeS Sector Skills Council NASSCOM

1. This document outlines the broad scope of coverage. This should be linked with OBF and training delivery plan. OBF (Outcome based framework) reflects the pedagogy used to ensure an expected outcome. Training delivery plan focuses on the sequence of delivery.

2. Though many NOSs have some seemingly common outcomes, notably core/generic, professional and technical skills, it is imperative to understand the contextual difference between them. For example, writing skills required to present the analytical results (in SSC/N2101) are different from the writing skills required to prepare a time plan (in SSC/N9001). Training providers are advised to:

    a. Embed such skills development in the learning pedagogy for each expected outcome

    b. Prepare a detailed session plan for training delivery with focus on sequence and duration of training

    c. Run a diagnostic test to assess prior learning of students and help trainers / students identify the need for gap training, optimal duration, and suitable training methodology. Accordingly, more introductory level sessions may be included in guided or self-paced mode of learning. E.g. adding some sessions on Functional English or Use of Internet and MS Office.

Trainer Prerequisites for Job role: Associate Analytics mapped to Qualification Pack: SSC/Q2101

Sr. No.	Area	Details
1	**Job Description**	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack SSC/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 this field.
3	**Minimum Educational Qualifications**	Minimum Bachelor's Degree in Statistics/ Science/Technology/ Mathematics or any other course; Preferred Master's Degree in Science/Technology/Statistics/ Mathematics or any other course
4a	**Domain Certification**	Minimum accepted score in SSC Assessment is 90% per NOS being taught in QP SSC/Q2101. Certification in SPSS, SAS, STATA and/or Spreadsheets RDBMS concepts, PL\SQL, OCA, Financial and accounting terminologies in respective language & various accounting standards and GAAPsis an added advantage.
4b	**Platform Certification**	Recommended that the Trainer is certified for the Job Role: "Trainer" mapped to the Qualification Pack: "SSC/Q1402". Minimum accepted score is 70%.
5	**Experience**	Field experience: Minimum 2 years' experience in the same domain Training experience: 1 year preferred

Annexure: Assessment Criteria

Assessment Criteria for Associate Analytics	
Job Role	**Associate Analytics**
Qualification Pack	**SSC/Q2101**
Sector Skill Council	**IT-ITeS**

Sr. No.	Guidelines for Assessment
1	Criteria for assessment for each Qualification Pack (QP) will be created by the Sector Skill Council (SSC). Each performance criteria (PC) will be assigned Theory and Skill/Practical marks proportional to its importance in NOS.
2	The assessment will be conducted online through assessment providers authorised by SSC.
3	Format of questions will include a variety of styles suitable to the PC being tested such as multiple choice questions, fill in the blanks, situational judgment test, simulation and programming test.
4	To pass a QP, a trainee should pass each individual NOS. Standard passing criteria for each NOS is 70%.
5	For latest details on the assessment criteria, please visit www.sscnasscom.com.

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ASSESSMENT OUTCOME (NOS CODE AND DESCRIPTION)	ASSESSMENT CRITERIA (PC)	TOTAL MARKS	OUT OF	MARKS ALLOCATION	
				THEORY	SKILLS PRACTICAL
1. SSC/N2101 (CARRY OUT RULE-BASED STATISTICAL ANALYSIS)	PC1. establish clearly the objectives and scope of the analysis	**100**	5	5	0
	PC2. obtain guidance from appropriate people to identify suitable data sources to agree the methodological approach		5	0	5
	PC3. obtain and structure data using standard templates and tools		10	5	5
	PC4. validate data accurately and identify anomalies		10	0	10
	PC5. obtain guidance from appropriate people on how to handle anomalies in data		5	0	5
	PC6. carry out rule-based analysis of the data in line with the analysis plan		15	5	10
	PC7. validate the results of your analysis according to statistical guidelines		10	0	10
	PC8. review the results of your analysis with appropriate people		5	5	0
	PC9. undertake modifications to your analysis based on inputs from appropriate people		10	0	10
	PC10. draw justifiable inferences from your analysis		15	0	15
	PC11. present the results and inferences from your analysis using standard templates and tools		5	0	5
	PC12. comply with your organization's policies, procedures and guidelines when carrying out rule-based quantitative analysis		5	5	0
		Total	100	25	75
2. SSC/N0703 (CREATE DOCUMENTS FOR KNOWLEDGE SHARING)	PC1. establish with appropriate people the purpose, scope, formats and target audience for the documents	**100**	15	5	10
	PC2. access existing documents, language standards, templates and documentation tools from your organization's knowledge base		10	0	10
	PC3. liaise with appropriate people to obtain and verify the information required for the documents		5	0	5

ASSESSMENT OUTCOME (NOS CODE AND DESCRIPTION)	ASSESSMENT CRITERIA (PC)	TOTAL MARKS	OUT OF	THEORY	SKILLS PRACTICAL
	PC4. confirm the content and structure of the documents with appropriate people		10	10	0
	PC5. create documents using standard templates and agreed language standards		15	5	10
	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		10	0	10
	PC9. update your organization's knowledge base with the documents		10	0	10
	PC10. comply with your organization's policies, procedures and guidelines when creating documents for knowledge sharing		10	10	0
	Total		100	35	65
2.NOS/N9001 (MANAGE YOUR WORK TO MEET REQUIREMENTS)	PC1. establish and agree your work requirements with appropriate people	**100**	6.25	0	6.25
	PC2. keep your immediate work area clean and tidy		12.5	6.25	6.25
	PC3. utilize your time effectively		12.5	6.25	6.25
	PC4. use resources correctly and efficiently		18.75	6.25	12.5
	PC5. treat confidential information correctly		6.25	0	6.25
	PC6. work in line with your organization's policies and procedures		12.5	0	12.5
	PC7. work within the limits of your job role		6.25	0	6.25
	PC8. obtain guidance from appropriate people, where necessary		6.25	0	6.25
	PC9. ensure your work meets the agreed requirements		18.75	6.25	12.5
	Total		**100**	**25**	**75**
3.SSC/N9002 (WORK EFFECTIVELY WITH COLLEAGUES)	PC1. communicate with colleagues clearly, concisely and accurately	**100**	20	0	20
	PC2. work with colleagues to integrate your work effectively with theirs		10	0	10
	PC3. pass on essential information to colleagues in line with organizational requirements		10	10	0

ASSESSMENT OUTCOME (NOS CODE AND DESCRIPTION)	ASSESSMENT CRITERIA (PC)	TOTAL MARKS	OUT OF	MARKS ALLOCATION	
				THEORY	SKILLS PRACTICAL
	PC4. work in ways that show respect for colleagues		20	0	20
	PC5. carry out commitments you have made to colleagues		10	0	10
	PC6. let colleagues know in good time if you cannot carry out your commitments, explaining the reasons		10	10	0
	PC7. identify any problems you have working with colleagues and take the initiative to solve these problems		10	0	10
	PC8. follow the organization's policies and procedures for working with colleagues		10	0	10
		Total	**100**	**20**	**80**
4.SSC/N9003 (MAINTAIN A HEALTHY, SAFE AND SECURE WORKING ENVIRONMENT)	PC1. comply with your organization's current health, safety and security policies and procedures	**100**	20	10	10
	PC2. report any identified breaches in health, safety, and security policies and procedures to the designated person		10	0	10
	PC3. identify and correct any hazards that you can deal with safely, competently and within the limits of your authority		20	10	10
	PC4. report any hazards that you are not competent to deal with to the relevant person in line with organizational procedures and warn other people who may be affected		10	0	10
	PC5. follow your organization's emergency procedures promptly, calmly, and efficiently		20	10	10
	PC6. identify and recommend opportunities for improving health, safety, and security to the designated person		10	0	10
	PC7. complete any health and safety records legibly and accurately		10	0	10
		Total	100	30	70
5.SSC/N9004 (PROVIDE DATA/INFORMATION IN STANDARD FORMATS)	PC1. establish and agree with appropriate people the data/information you need to provide, the formats in which you need to provide it, and when you need to provide it	**100**	12.5	12.5	0

ASSESSMENT OUTCOME (NOS CODE AND DESCRIPTION)	ASSESSMENT CRITERIA (PC)	TOTAL MARKS	OUT OF	MARKS ALLOCATION	
				THEORY	SKILLS PRACTICAL
	PC2. obtain the data/information from reliable sources		12.5	0	12.5
	PC3. check that the data/information is accurate, complete and up-to-date		12.5	6.25	6.25
	PC4. obtain advice or guidance from appropriate people where there are problems with the data/information		6.25	0	6.25
	PC5. carry out rule-based analysis of the data/information, if required		25	0	25
	PC6. insert the data/information into the agreed formats		12.5	0	12.5
	PC7. check the accuracy of your work, involving colleagues where required		6.25	0	6.25
	PC8. report any unresolved anomalies in the data/information to appropriate people		6.25	6.25	0
	PC9. provide complete, accurate and up-to-date data/information to the appropriate people in the required formats on time		6.25	0	6.25
		Total	**100**	**25**	**75**
6.SSC/N9005 (DEVELOP YOUR KNOWLEDGE, SKILLS AND COMPETENCE)	PC1. obtain advice and guidance from appropriate people to develop your knowledge, skills and competence	**100**	10	0	10
	PC2. identify accurately the knowledge and skills you need for your job role		10	0	10
	PC3. identify accurately your current level of knowledge, skills and competence and any learning and development needs		20	10	10
	PC4. agree with appropriate people a plan of learning and development activities to address your learning needs		10	0	10
	PC5. undertake learning and development activities in line with your plan		20	10	10
	PC6. apply your new knowledge and skills in the workplace, under supervision		10	0	10
	PC7. obtain feedback from appropriate people on your knowledge and skills and how effectively you apply them		10	0	10
	PC8. review your knowledge, skills and competence regularly and take appropriate action		10	0	10
		Total	**100**	**20**	**80**

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