



## QUALIFICATION FILE

### Junior Data Analyst

Short Term Training (STT)  Long Term Training (LT)  Apprenticeship

Upskilling  Dual/Flexi Qualification  For ToT  For ToA

General  Multi-skill (MS)  Cross Sectoral (CS)  Future Skills  OEM

NCrF/NSQF Level: 4.5

#### Submitted By:

National Institute of Electronics and Information Technology

NIELIT Bhawan,  
Plot No. 3, PSP Pocket, Sector-8,  
Dwarka, New Delhi-110077,  
Phone:- 91-11-2530 8300  
e-mail:- [contact@nielit.gov.in](mailto:contact@nielit.gov.in)

**Table of Contents**

<b>Section 1: Basic Details</b>	3
<b>Section 2: Module Summary</b>	6
<b>Section 3: Training Related</b>	9
<b>Section 4: Assessment Related</b>	9
<b>Section 5: Evidence of the need for the Qualification</b>	10
<b>Section 6: Annexure &amp; Supporting Documents Check List</b>	10
Available at Annexure-I: Evidence of Level	10
Available at Annexure-II: Tools and Equipment	10
Available at Annexure-III: Industry Validation Summary	10
Available at Annexure-IV: Training and Employments Details	10
Available at Annexure-V: Blended Learning	10
Available at Annexure-VI: Detailed Assessment Criteria	10
Available at Annexure-VII: Assessment Strategy	11
Available at Annexure-VIII: Career Progression	11
Available at Annexure-IX: Acronym and Glossary	11

## Section 1: Basic Details

1. <b>Qualification Name</b>	Junior Data Analyst		
2. <b>Sector/s</b>	IT-ITeS		
3. <b>Type of Qualification:</b> <input checked="" type="checkbox"/> New <input type="checkbox"/> Revised <input type="checkbox"/> Has Electives/Options <input type="checkbox"/> OEM	<b>NQR Code &amp; version of existing/previous qualification:</b> NA	<b>Qualification Name of existing/previous version:</b> NA	
4. a. OEM Name b. Qualification Name (Wherever applicable)	-		
5. <b>National Qualification Register (NQR) Code &amp; Version</b> (Will be issued after NSQC approval)	QG-4.5-IT-00349-2023-V1-NIELIT	<b>6. NCrF/NSQF Level:</b> 4.5	
7. <b>Award (Certificate/Diploma/Advance Diploma/ Any Other</b> (Wherever applicable specify multiple entry/exists also & provide details in annexure)	Certificate		
8. <b>Brief Description of the Qualification</b>	The Junior Data Analyst Qualification is meant to develop the front end and Implementation of use cases of Data Analytics. The Data Analyst Associate Qualification is meant to inculcate the basic skills of data handling, processing and visualization. The trained learner will be able to view data in summary and aggregated form, he/she would be able to formulate equation for prediction. inculcate the basic skills of Hadoop Framework and programming experience of core Java. Training in different tools of Hadoop like Map Reduce, Hive will increase the exposure to the analytics field		
9. <b>Eligibility Criteria for Entry for Student/Trainee/Learner/Employee</b>	<b>Entry Qualification &amp; Relevant Experience:</b>		
	S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)
	1.	Completed 1st year of UG	NA
	2.	Pursuing 1st year of UG and continuous education	NA
	3.	Pursuing 3rd year of 3-year diploma after 10th and continuous education	NA
4.	Completed 3-year diploma after 10	NA	

		5.	Completed 2nd year of 2 year diploma after 12th		NA													
		6.	Pursuing 2nd year of 2- year diploma after 12 and continuous education		NA													
		7.	10th Grade pass plus 3 years of vocational education & Training		NA													
		8.	Previous relevant Qualification of NSQF Level 4 and with minimum education as 8 <sup>th</sup> Grade pass		1.5 year relevant experience													
10.	<b>Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF)</b>	18 Credits		<b>11. Common Cost Norm Category (I/II/III) (wherever applicable):</b>  Category-II (Information and Communication Technology)														
12.	<b>Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)</b>	NA																
13.	<b>Training Duration by Modes of Training Delivery (Specify <i>Total Duration</i> as per selected training delivery modes and as per requirement of the qualification)</b>	<input checked="" type="checkbox"/> Offline <input type="checkbox"/> Online <input type="checkbox"/> Blended <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; padding: 5px;">Training Delivery Modes</th> <th style="text-align: center; padding: 5px;">Theory (Hours)</th> <th style="text-align: center; padding: 5px;">Practical (Hours)</th> <th style="text-align: center; padding: 5px;">OJT Mandatory (Hours)</th> <th style="text-align: center; padding: 5px;">ES (Hours)</th> <th style="text-align: center; padding: 5px;">Total (Hours)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 5px;">Classroom (offline)</td> <td style="text-align: center; padding: 5px;">180</td> <td style="text-align: center; padding: 5px;">270</td> <td style="text-align: center; padding: 5px;">30</td> <td style="text-align: center; padding: 5px;">60</td> <td style="text-align: center; padding: 5px;">540</td> </tr> </tbody> </table> <p style="text-align: center; margin-top: 10px;"><i>The mode of delivery shall be based on the regional demand and can be offered in any of the above modes mentioned.</i></p>					Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	ES (Hours)	Total (Hours)	Classroom (offline)	180	270	30	60	540
Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	ES (Hours)	Total (Hours)													
Classroom (offline)	180	270	30	60	540													
14.	<b>Aligned to NCO/ISCO Code/s (if no code is available mention the same)</b>	NCO-2015 Code:2511.0105: Analyst																
15.	<b>Progression path after attaining the qualification (Please show Professional and Academic progression)</b>	<b>Academic:</b> <b>Vertical</b> Level 5: Certified Data Analyst, Data analyst Level 6: Post Graduate Program in Data Engineering																
		<b>Professional: -&gt;</b> Database Administrator->Data analyst-> Data Engineer->Data Architect->Data Scientist->																

16.	<b>Other Indian languages in which the Qualification &amp; Model Curriculum are being submitted</b>	<b>Qualification file available in English and Hindi</b>
17.	<b>Is similar Qualification(s) available on NQR-if yes, justification for this qualification</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No URLs of similar Qualifications:
18.	<b>Is the Job Role Amenable to Persons with Disability</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <ul style="list-style-type: none"> <li>a. Locomotor Disability               <ul style="list-style-type: none"> <li>i. Leprosy Cured Person</li> <li>ii. Dwarfism</li> <li>iii. Muscular Dystrophy</li> <li>iv. Acid Attack Victims</li> </ul> </li> <li>b. Visual Impairment               <ul style="list-style-type: none"> <li>i. Low Vision</li> </ul> </li> </ul>
19.	<b>How Participation of Women will be Encouraged</b>	Participation of Women Candidates will be ensured as per Existing government norms. Time to time exclusive batches for women would be run for the proposed course. funding of women batches from IT for masses scheme /other schemes launched by Govt. from time to time
20.	<b>Are Greening/ Environment Sustainability Aspects Covered (Specify the NOS/Module which covers it)</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
21.	<b>Is Qualification Suitable to be Offered in Schools/Colleges</b>	Schools <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Colleges <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
22.	<b>Name and Contact Details of Submitting / Awarding Body SPOC</b> <i>(In case of CS or MS, provide details of both Lead AB &amp; Supporting ABs)</i>	Name: Meenu Dhir Email: meenudhir@nielit.gov.in Contact No.: 9779131848 Website: nielit.gov.in
23.	<b>Final Approval Date by NSQC: 29.03.2023</b>	24. Validity Duration: 3 Years
		<b>25. Next Review Date: 29.03.2026</b>

## Section 2: Module Summary

### NOS/s of Qualifications

1. Perform basic calculation using spreadsheet
2. Manage structured data
3. Analyse data using spreadsheet tool
4. Manage data in Open source tool
5. Visualize data graphically
6. Implementation of use cases of Data Analytics
7. Installation of Hadoop Framework and Java Programming.
8. Manage big data using hadoop
9. Implementation of use cases of Data Analytics
10. Installation of Hadoop Framework and Java Programming.
11. Manage big data using hadoop
12. Implementation of use cases of Data Analytics

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer curriculum document.

**Th.**-Theory **Pr.**-Practical **OJT**-On the Job **Man.**-Mandatory **Training** **Rec.**-Recommended **Proj.**-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)			Assessment Marks			
						Th.	Pr.	Total	Th.	Pr.	Total	
1.	Perform basic calculation using spreadsheet	NOS Code: NIE/ITS/N14054	Core	4.5	1	15	15	30	12.5	6	18.5	5.28
2.	Manage structured data	NOS Code: NIE/ITS/N14055	Core	4.5	1	15	15	30	12.5	6	18.5	5.28
3.	Analyse data using spreadsheet tool	NOS Code: NIE/ITS/N14056	Core	4.5	3	30	60	90	37.5	18	55.5	15.85
4.	Manage data in Open source tool	NOS Code: NIE/ITS/N14057	Core	4.5	1	15	15	30	12.5	6	18.5	5.28
5.	Visualize data graphically	NOS Code: NIE/ITS/N14058	Core	4.5	2	20	40	60	25	12	37	10.57

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)			Assessment Marks			Weightage (%) (if applicable)
						Th.	Pr.	Total	Th.	Pr.	Total	
6.	Installation of Hadoop Framework and Java Programming	NOS Code: NIE/ITS/N14059	Core	4.5	1	15	15	30	14.28	6	20.28	5.79
7.	Manage big data using hadoop	NOS Code: NIE/ITS/N14060	Core	4.5	2	30	30	60	28.57	12	40.57	11.59
8.	Front end application development Front end application development	NOS Code: NIE/ITS/N14061	Core	4.5	2	20	40	60	28.57	12	40.57	11.59
9	Implementation of use cases of Data Analytics	NOS Code: NIE/ITS/N14062	Core	4.5	2	20	40	60	28.57	12	40.57	11.59
						180	270	450	200	90	290	82.82
10	Employability skill	NOS Code: DGT/VSQ/N0102	Core	4.5	2	60		60			30	8.57
11	OJT/Project	N/A	Core	4.5	1	30		30			30	8.57
Duration (in Hours) /Total Marks						18			540			350
												100

Assessment Components	NOS Included	Duration (in mins)	Marks
Theory 1: Data Analytics Assistant Paper-1	NOS 1-NOS 5	90	100
Theory 2: Data Analytics Assistant Paper-2	NOS 6- NOS -9	90	100
Practical: Data Analytics Assistant	NOS 1-NOS 9	180	90
Employability Skills	-	60	30
OJT/ Project	-	30	30
<b>Total</b>		450	350

**\*\*\*Assessment strategy shall be as per NIELIT Norms prevailing at times.**

Assessment - Minimum Qualifying Percentage

*Please specify **any one** of the following:*

**Minimum Pass Percentage – Aggregate at qualification level: 50 % (Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)**

**Section 3: Training Related**

1.	<b>Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)</b>	BCA/A-Level/Diploma in CS/IT/ allied area with 1 year of Experience in training.
2.	<b>Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)</b>	MCA/B-Level/B.Tech in CS/IT/EC/EE/ allied areas with an experience of 2 years in training
3.	<b>Tools and Equipment Required for Training</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(If "Yes", details to be provided in Annexure)</i>
4.	<b>In Case of Revised Qualification, Details of Any Upskilling Required for Trainer</b>	NA

**Section 4: Assessment Related**

1.	<b>Assessor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)</b>	MCA/B-Level/B.Tech in CS/IT/EC/EE/ allied areas with an experience of 2 years in training
2.	<b>Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)</b>	The assessor carries out theory online assessments through the remote proctoring methodology. Theory examination would be conducted online and the paper comprise of MCQ. Conduct of assessment is through trained proctors. Once the test begins, remote proctors have full access to the candidate's video feeds and computer screens. Proctors authenticate the candidate based on registration details, pre-test image captured and I- card in possession of the candidate. Proctors can chat with candidates or give warnings to candidates. Proctors can also take screenshots, terminate a specific user's test session, or re-authenticate candidates based on video feeds.
3.	<b>Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)</b>	An External Examiner/ Observer (Subject matter expert) are deployed including NIELIT scientific officers who are subject expert for evaluation of Practical examination/ internal assessment / Project/ Presentation/ assignment and Major Project (if applicable). Qualification is generally B.Tech
4.	<b>Assessment Mode (Specify the assessment mode)</b>	<b>Online for Theory</b> <b>Online/Offline/ Blended for Practical</b>
5.	<b>Tools and Equipment Required for Assessment</b>	<input checked="" type="checkbox"/> Same as for training <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(details to be provided in Annexure-if it is different for Assessment)</i>

### Section 5: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

1.	<b>Latest Skill Gap Study (not older than 2 years) (Yes/No):</b> Yes
2.	<b>Latest Market Research Reports or any other source (not older than 2 years) (Yes/No):</b> Yes
3.	<b>Government /Industry initiatives/ requirement (Yes/No):</b> Yes
4.	<b>Number of Industry validation provided:</b> 3
5.	<b>Estimated nos. of persons to be trained and employed:</b> 500
6.	<b>Evidence of Concurrence/Consultation with Line Ministry/State Departments:</b> If "No", why: No, NIELIT is recognized as AB and AA under Government Category. NIELIT is HRD arm of MeitY.

### Section 6: Annexure & Supporting Documents Check List

1.	<b>Annexure:</b> NCrF/NSQF level justification based on NCrF level/NSQF descriptors ( <i>Mandatory</i> )	Available at Annexure-I: Evidence of Level
2.	<b>Annexure:</b> List of tools and equipment relevant for qualification ( <i>Mandatory, except in case of the online course</i> )	Available at Annexure-II: Tools and Equipment
3.	<b>Annexure:</b> Industry Validation Summary	Available at Annexure-III: Industry Validation Summary
4.	<b>Annexure: Training and Employments Details</b>	Available at Annexure-IV: Training and Employments Details
5.	<b>Annexure: Blended Learning</b>	Available at Annexure-V: Blended Learning
6.	<b>Annexure: Detailed Assessment Criteria</b>	Available at Annexure-VI: Detailed Assessment Criteria

7.	<b>Annexure: Assessment Strategy</b>	Available at Annexure-VII: Assessment Strategy
8.	<b>Supporting Document: Career Progression</b>	Available at Annexure-VIII: Career Progression
9.	<b>Supporting Document: Acronym and Glossary</b>	Available at Annexure-IX: Acronym and Glossary
10.	<b>Supporting Document: Model Curriculum (Mandatory – Public view)</b>	Available at Annexure-A: Model Curriculum
11.	<b>Supporting Document: Assessment SOP (Mandatory)</b>	Available at Annexure-C: Examination SoP

### **Annexure-I: Evidence of Level**

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
<b>Professional Theoretical Knowledge/Process</b>	<p>Gaining Knowledge how to Perform basic calculation using spreadsheet</p> <p>2.Understanding how to Manage structured data</p> <p>3. The candidate will be able to Analyse data using spreadsheet tool</p> <p>4. The candidate will be able to Manage data in Open source tool</p> <p>5. The candidate will be able to Visualize data graphically</p> <p>6.The candidate will Implement the use cases of Data Analytics</p> <p>7. Installation of Hadoop, Java concepts, OOPS concepts, Looping techniques, Methods, Method Overloading, Method Over-riding, Arrays, Java Programming</p> <p>8. The candidate will understand HDFS, Architecture of Hadoop, Configuring Hadoop Cluster &amp; Hadoop Commands.</p> <p>9. Understanding Big Data Concepts, Need for analyzing Big</p>	<p>1. Possesses specialized operational knowledge and understanding of the work.</p> <p>2. Have complete knowledge of the concept of time required for delivery; and Quality for a range of issues</p>	4.5

	Data, its roles in Business Intelligence and decision making. 10. Analysis of Data Using Mapreduce Implementation with examples		
<b>Professional and Technical Skills/ Expertise/ Professional Knowledge</b>	<ol style="list-style-type: none"> <li>1. The candidate will be able to understand the basic concepts of spreadsheet.</li> <li>2. They will be thorough to understand what is structured data and how to manage it.</li> <li>3. The visualization tool will give insight to the data graphically.</li> <li>4. The candidates will be able to understand the concepts of HDFS and Mapreduce.</li> <li>5. The project will help to get the better understanding of the concepts laid above</li> </ol>	<ol style="list-style-type: none"> <li>1. Possesses specialized professional and technical skills; displays clarity of professional knowledge and technical skills in a broad range of activities/ tasks.</li> <li>2. Have knowledge of collecting and interpreting the available information, drawing conclusions &amp; communicating the same</li> </ol>	4.5
<b>Employment Readiness &amp; Entrepreneurship Skills &amp; Mind-set/Professional Skill</b>	<ol style="list-style-type: none"> <li>1. Introduction to Employability Skills</li> <li>2. Career Development &amp; Goal Setting</li> <li>3. Becoming a Professional in the 21st Century</li> <li>4. Constitutional values - Citizenship</li> <li>5. Basic English Skills</li> <li>6. Communication Skills</li> <li>7. Essential Digital Skills</li> <li>8. Financial and Legal Literacy</li> <li>9. Customer Service</li> <li>10. Entrepreneurship</li> <li>11. Diversity &amp; Inclusion</li> <li>12. Getting Ready for Apprenticeship &amp; Jobs</li> </ol>	<ol style="list-style-type: none"> <li>1. Can explain Entrepreneurial Mindset and describe the importance of it in the context of opportunity curation for future jobs.</li> <li>2. Can comfortably use most of the basic software with proficiency.</li> <li>3. Have the ability to relate to the 5 pillars of Social Emotional Skills and describe the similarities between SES and Emotional Intelligence</li> </ol>	4.5
<b>Broad Learning Outcomes/Core Skill</b>	<ol style="list-style-type: none"> <li>1. Implement Basic of Spreadsheets Solutions.</li> <li>2. Creating Virtualization using Tableau</li> <li>3. Realization of Projects in Big Data Domains</li> <li>4. The candidate will understand the concepts of Hadoop, HDFS , Mapreduce.</li> </ol>	<ol style="list-style-type: none"> <li>1. Students are able to use, create, and configure virtualization solutions.</li> <li>2. Have knowledge of the Cloud computing Project Cycle and apply Cloud</li> </ol>	4.5

		Computing technology to improve solutions.	
<b>Responsibility</b>		Takes complete responsibility for delivery and quality of own	4.5

### Annexure-II: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

**Batch Size:** 30

<b>S. No.</b>	<b>Tool / Equipment Name</b>	<b>Specification</b>	<b>Quantity for specified Batch size</b>
1	Classroom	1 (30 Sq.m)	30
2	Student Chair	30	30
3	Student Table	30	30
4	Desktop computers with accessories	32 GB RAM with Camera, Headphone and Windows,	30
5	Desk jet printer	1 Nos.	A4
6	Server	Xeron Processor dual core processor with 128 gb ram and 4 TB Hardisk	1

#### Classroom Aids

The aids required to conduct sessions in the classroom are:

1. LCD Projector
2. Pin-up Board
3. WhiteBoard

**Annexure-III: Industry Validations Summary**

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID
1.	ThinkNext Technologies	Mr Munish Mittal	Director	ThinkNEXT Technologies Private Limited S.C.F 113, Sector 65, Mohali, Punjab 160062	9815994197	thinknextmunish@gmail.com
2.	Jan Samridhi Dumka	Gobind nath Maji	Secretary	Mahesh munda road, Nuthan dih near sido kanhu model school, Nuthan Dih nala, Jamtara, Jharkhand- 815355	8789620133	gobind107@gmail.com
3	United Computer	Subhasis Choudhury	Chief Executive	Chotonilpur (Pirtala), P.O. Sripally, Burdwan-713103	9641820965	<u>united-computer97@rediffmail.com</u>

**Annexure IV: Training & Employment Details****Training and Employment Projections:**

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities
2023	500	1100	100	400	5	14
2024	600	1500	120	500	5	15
2025	700	1800	150	600	5	15

*Data to be provided year-wise for next 3 years*

**Annexure-V: Blended Learning****Blended Learning Estimated Ratio & Recommended Tools:**

<b>S. No.</b>	<b>Select the Components of the Qualification</b>	<b>List Recommended Tools – for all Selected Components</b>	<b>Offline: Online Ratio</b>
1	Theory/ Lectures - Imparting theoretical and conceptual knowledge	Online interaction platforms like JitSi Meet, Bharat VC, Google Meet, MS Teams, etc.	60:40
2	Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners	Online interaction platforms like JitSi Meet, Bharat VC, Google Meet, MS Teams, etc.	60:40
3	Showing Practical Demonstrations to the learners	Online interaction platforms like JitSi Meet, Bharat VC, Google Meet, MS Teams, etc.	60:40
4	Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training	NA	100:0
5	Tutorials/ Assignments/ Drill/ Practice	Online interaction platforms like JitSi Meet, Bharat VC, Google Meet, MS Teams, etc.	50:50
6	Proctored Monitoring/ Assessment/ Evaluation/ Examinations	NIELIT Remote Proctored Software	Online: 100% Theory Offline: 100% Practical
7	On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training	Simulated Platform	Either 100% online on virtual environment Or 100% offline in the Industry.

**Annexure-VI: Detailed Assessment Criteria**

Detailed assessment criteria for each NOS/Module are as follows:

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks
<b>NOS 1:</b> <b>Perform basic calculation using spreadsheet</b>	Features of Spreadsheet Creating and saving worksheet and workbook Layouts, text formats, alignment Basic functions and formulas, sorting Graphs	12.5	6
<b>NOS 2:</b> <b>Manage structured data</b>	Introduction to database , advantages of DBMS, Concept of keys: candidate key, primary key, alternate key, Foreign key, Fundamental integrity rules: entity integrity, referential integrity. Entity-relationship model .ER-diagram, SQL, Knowledge Discovery in Databases, Data Mining, Data warehouse. Migrating data from source to data warehouse, cleaning, aggregation operations. Knowledge Discovery in Databases, Data Mining, Data warehouse. Migrating data from source to data warehouse, cleaning, aggregation operations.	12.5	6
<b>NOS 3:</b> <b>Analyses data using spreadsheet tool</b>	Data, table & formatting Conditional formatting Advanced charting Pivot Table Data Validation Filtering What if analysis, Role of Maths and Statistical techniques in Data Science,Probability and Statistics, Regression analysis, Descriptive statistics,Linear Regression	37.5	18
<b>NOS 4:</b> <b>Manage data in Open source tool</b>	Introduction to Virtual Machine, creating and configuring Virtual Machine, Linux History, Benefits of Linux, Different Flavors of Linux, Introducing Ubuntu, Installing Ubuntu: Starting Up, Logging in, Exploring the Desktop, Ubuntu Basics, Browsing the File System, Understanding File System Concept, Managing Files, Real and Virtual Files, Mounting, File Searches, File Size, File Space Viewing Text Files, Using a Command Line Text Editor, Creating Files, Searching through Files, Comparing Text Files, Copying, Moving, Managing Files.	12.5	6

<b>NOS 5 :</b> <b>Visualize data graphically</b>	Introduction Tableau , Connecting to Excel, CSV Text Files, Connecting to Databases, Analyzing, Formatting, Sorting and charts	25	12
<b>NOS 6:</b> <b>Installation of Hadoop Framework and Java Programming</b>	Installation of Hadoop, Java concepts, Oops concepts, Looping techniques, Methods, Method Overloading, Method Over-riding, Arrays, Java Programming  HDFS, Architecture of Hadoop, Configuring Hadoop Cluster & Hadoop Commands.	14.28	6
<b>NOS 7:</b> <b>Manage big data using hadoop</b>	Big Data Concepts, Need for analyzing Big Data, its roles in Business Intelligence and decision making.  Analysis of Data Using Mapreduce and Hive. Implementation with examples	28.57	12
<b>NOS 8:</b> <b>Front end application development Front end application development</b>	Advanced Java, Applets, Swings - Front end  Java Database Connectivity, JDBC-ODBC Bridge, Creating JDBC Drivers, DSN Driver Manager, Connection, Statement, Result Set, ODBC Database, URL Statement and its use with Applets	28.57	12
<b>NOS 9:</b> <b>Implementation of use cases of Data Analytics</b>	Student will be to implement various use cases in data analytics.	28.57	12
<b>Employability skill</b>	Students will be able to get the additional skills apart from the technical skills, to be job ready	30	
<b>OJT</b>	Student will be able to learn the working in a job	30	
<b>Total</b>		<b>350</b>	

### Annexure-VII: Assessment Strategy

- Assessment of the qualification evaluates candidates to ascertain that they can integrate knowledge, skills and values for carrying out relevant tasks as per the defined learning outcomes and assessment criteria.
- The underlying principle of assessment is fairness and transparency. The evidence of the outcomes and assessment criteria. competence acquired by the candidate can be obtained by conducting Theory (Online), Practical assessment, Internal assessment, Project/Presentation/ Assignment, Major Project. The emphasis is on the practical demonstration of skills & knowledge gained by the candidate through the training. Each OUTCOME is assessed & marked separately. A candidate is required to pass all OUTCOMES individually based on the passing criteria.

#### About Examination Pattern:

1. The question papers for the theory and practical exams are set by the Examination wing (assessor) of NIELIT HQS.
2. The assessor assigns roll number.
3. The assessor carries out theory online assessments through remote proctoring methodology. Theory examination would be conducted online and the paper comprise of MCQ. Conduct of assessment are through trained proctors. Once the test begins, remote proctors have full access to candidate's video feeds and computer screens. Proctors authenticate the candidate based on registration details, pre-test image captured and I-card in possession of the candidate. Proctors can chat with candidates or give warnings to candidates. Proctors can also take screenshots, terminate a specific user's test session, or re-authenticate candidates based on video feeds.
4. An External Examiner/ Observer may be deployed including NIELIT officials for evaluation of Practical examination/ internal assessment / Project/ Presentation/. Major Project (if applicable) would be evaluated preferably by external/ subject expert including NIELIT officials.
5. Pass percentage would be 50% marks in each component.
6. Candidates may apply for re-examination within the validity of registration (only in the assessment component in which the candidate failed).
7. For re-examination prescribed examination fee is required to be paid by the candidate only for the assessment component in which the candidate wants to reappear.
8. There would be no exemption for any paper/module for candidates having similar qualifications or skills.
9. The examination will be conducted in English language only.

- Quality assurance activities: A pool of questions is created by a subject matter expert and moderated by other SME. Test rules are set beforehand. Random set of questions which are according to syllabus appears which may differ from candidate to candidate. Confidentiality and impartiality are maintained during all the examination and evaluation processes.

**Annexure –VIII: Career Progression****Academic:****Vertical**

Level 5: Certified Data Analyst, Data analyst

Level 6: Post Graduate Program in Data Engineering

**Professional: ->**

Database Administrator

-&gt;Data analyst-&gt; Data Engineer-&gt;

Data Architect-&gt;Data Scientist-&gt;

**Annexure-IX: Acronym and Glossary**

## Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

## Glossary

Term	Description
<b>National Occupational Standards (NOS)</b>	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
<b>Qualification</b>	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
<b>Qualification File</b>	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
<b>Sector</b>	A grouping of professional activities on the basis of their main economic function, product, service or technology.
<b>Long Term Training</b>	Long-term skilling means any vocational training program undertaken for a year and above. <a href="https://ncvet.gov.in/sites/default/files/NCVET.pdf">https://ncvet.gov.in/sites/default/files/NCVET.pdf</a>