

QUALIFICATION FILE–Standalone NOS

Essentials of Cloud Computing and Virtualization (Upskilling)

Horizontal/Generic Vertical/Specialization

Upskilling Dual/Flexi Qualification For ToT For ToA

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

NCrF/NSQF Level: 4

Submitted By:

National Institute of Electronics and Information Technology (NIELIT)

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Section 1: Basic Details

1.	NOS-Qualification Name	Essentials of Cloud Computing and Virtualization (Upskilling)																
2.	Sector/s	IT-ITeS																
3.	Type of Qualification <input type="checkbox"/> New <input checked="" type="checkbox"/> Revised	NQR Code & version of the existing /previous qualification: Certified Cloud Computing and Virtualization Expert– Upskilling	Qualification Name of the existing/previous version: 2022/ITES/NIELIT/05519															
4.	National Qualification Register (NQR) Code & Version	NG-04-IT-04174-2025-V2-NIELIT	5. NCrF/NSQF Level: 4															
6.	Brief Description of the Standalone NOS	The Standalone NOS “Essentials of Cloud Computing & Virtualization (Upskilling)” provides a strong foundation in cloud and virtualization, covering networking, deployment models, services, security, and communication skills through theory and practical applications. Participants gain hands-on experience with virtualized environments, cloud solutions, infrastructure provisioning, and security implementation using industry tools and platforms like VMware, Citrix, Hyper-V, VirtualBox, Kubernetes, and Google Cloud.																
7.	Eligibility Criteria for Entry for a Student/Trainee/Learner/Employee	<p>Entry Qualification & Relevant Experience:</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Academic/Skill Qualification (with Specialization - if applicable)</th> <th>Relevant Experience (with Specialization - if applicable)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>12th with Science Subject or equivalent</td> <td>NA</td> </tr> <tr> <td>2</td> <td>2nd year of 3-year diploma in CS/IT/EC/EE/allied branches after 10th</td> <td>NA</td> </tr> <tr> <td>3</td> <td>Previous relevant Qualification of NSQF Level 3.5</td> <td>1.5 Year experience in IT or allied Sector</td> </tr> <tr> <td>4</td> <td>Previous relevant Qualification of NSQF Level 3</td> <td>3 Year experience in IT or allied Sector</td> </tr> </tbody> </table> <p>*Prerequisite:</p> <ul style="list-style-type: none"> • Basic knowledge of OS (windows & linux). • Basic concepts of Cloud. 		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Relevant Experience (with Specialization - if applicable)	1	12 th with Science Subject or equivalent	NA	2	2nd year of 3-year diploma in CS/IT/EC/EE/allied branches after 10th	NA	3	Previous relevant Qualification of NSQF Level 3.5	1.5 Year experience in IT or allied Sector	4	Previous relevant Qualification of NSQF Level 3	3 Year experience in IT or allied Sector
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1	12 th with Science Subject or equivalent	NA																
2	2nd year of 3-year diploma in CS/IT/EC/EE/allied branches after 10th	NA																
3	Previous relevant Qualification of NSQF Level 3.5	1.5 Year experience in IT or allied Sector																
4	Previous relevant Qualification of NSQF Level 3	3 Year experience in IT or allied Sector																
8.	Credits Assigned to this NOS-Qualification, Subject to Assessment (as per National Credit Framework (NCrF))	7 Credits	9. Common Cost Norm Category (I/II/III) (wherever applicable): Category-II															
10.	Any Licensing Requirements for Undertaking Training on This Qualification (wherever applicable)	The open source resources can be used. Annual subscription-based license to access cloud platform may also be purchased.																

11.	Training Duration by Modes of Training Delivery <i>(Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)</i>	<input checked="" type="checkbox"/> Offline <input type="checkbox"/> Online <input type="checkbox"/> Blended															
<table border="1"> <thead> <tr> <th data-bbox="992 212 1377 284">Training Delivery Mode</th> <th data-bbox="1377 212 1619 284">Theory (Hours)</th> <th data-bbox="1619 212 1861 284">Practical (Hours)</th> <th data-bbox="1861 212 2101 284">Total (Hours)</th> </tr> </thead> <tbody> <tr> <td data-bbox="992 284 1377 339">Classroom (offline)</td> <td data-bbox="1377 284 1619 339">83</td> <td data-bbox="1619 284 1861 339">127</td> <td data-bbox="1861 284 2101 339">210</td> </tr> </tbody> </table>		Training Delivery Mode	Theory (Hours)	Practical (Hours)	Total (Hours)	Classroom (offline)	83	127	210								
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12.	Assessment Criteria	<table border="1"> <thead> <tr> <th data-bbox="992 347 1176 523">Theory (Marks)</th> <th data-bbox="1176 347 1359 523">Practical (Marks)</th> <th data-bbox="1359 347 1579 523">Employability Skills/Internal Assessment (Marks)</th> <th data-bbox="1579 347 1798 523">Project/OJT (Marks)</th> <th data-bbox="1798 347 1951 523">Total (Marks)</th> <th data-bbox="1951 347 2101 523">Passing %age</th> </tr> </thead> <tbody> <tr> <td data-bbox="992 523 1176 579">100</td> <td data-bbox="1176 523 1359 579">60</td> <td data-bbox="1359 523 1579 579">20</td> <td data-bbox="1579 523 1798 579">20</td> <td data-bbox="1798 523 1951 579">200</td> <td data-bbox="1951 523 2101 579">50</td> </tr> </tbody> </table> <p>The centralised online assessment is conducted by the Examination Wing, NIELIT Headquarters. *Assessment strategy shall be as per NIELIT Norms prevailing at times.</p>				Theory (Marks)	Practical (Marks)	Employability Skills/Internal Assessment (Marks)	Project/OJT (Marks)	Total (Marks)	Passing %age	100	60	20	20	200	50
Theory (Marks)	Practical (Marks)	Employability Skills/Internal Assessment (Marks)	Project/OJT (Marks)	Total (Marks)	Passing %age												
100	60	20	20	200	50												
13.	Is the NOS Amenable to Persons with Disability	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No a. Locomotor Disability: Leprosy Cured Person, Dwarfism, Muscular Dystrophy and Acid Attack Victims b. Visual Impairment: Low Vision															
14.	Progression Path After Attaining the Qualification, wherever applicable	Cloud Architect															
15.	How will the participation of women be encouraged?	Participation by women can be ensured through Government Schemes. Occasionally, exclusive batches for women would be run for the proposed courses. Funding is available for women's participation under other schemes launched by the Government from time to time.															
16.	Other Indian languages in which the Qualification & Model Curriculum are being submitted	Qualification files available in English & Hindi Language.															
17.	Is similar NOS available on NQR-if yes, justification for this qualification	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No															
18.	Name and Contact Details Submitting / Awarding Body SPOC <i>(In the case of CS or MS, provide details of both Lead AB & Supporting ABs)</i>	Name: Dr. Munivel E Designation: Scientist 'E', Email: munivel@nielit.gov.in Contact No: 9400055757 Website: https://nielit.gov.in															
19.	Final Approval Date by NSQC: 08.05.2025	20. Validity Duration: 3 years		21. Next Review Date: 08.05.2028													

Section 2: Training Related

1.	Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	B.E./BTech/ MSc in Electrical/Electronics/IT/Computer Science with 2 Years of relevant industry Experience and 1 year of teaching experience
2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	B.E./B.Tech/M.Sc in Electrical/Electronics/IT/Computer Science with 3 Years of relevant industry Experience and 1 year of teaching experience.
3.	Tools and Equipment Required for the Training	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Available at Annexure-II
4.	In Case of Revised NOS, details of Any Upskilling Required for Trainer	Not Applicable

Section 3: Assessment Related

1.	Assessor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	B.E./B.Tech/M.Sc in Electrical/Electronics/IT/Comp. Sc. With 3 Years of relevant industry experience and 1 year of teaching experience
2.	Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines), (wherever applicable)	The assessor carries out theory online assessments through the remote proctoring methodology. Theory examination will be conducted online, and the paper will comprise MCQ. Conduct of assessment is through trained proctors. Once the test begins, remote proctors can access the candidate's video feeds and computer screens. Proctors authenticate the candidate based on registration details, the pre-test image captured, and the 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.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	External Examiners/ Observers (Subject matter experts) are deployed, including NIELIT scientific officers who are subject experts for evaluating practical examinations, internal assessments, Projects, Presentations, assignments, and major projects (if applicable). Qualification is generally B.Tech .
4.	Assessment Mode (Specify the assessment mode)	A centralized online examination will be conducted.
5.	Tools and Equipment Required for Assessment	Same as for training <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Section 4: Evidence of the Need for the Standalone NOS

1.	Government /Industry initiatives/ requirement (Yes/No): Yes.
2.	Number of Industry validations provided: 05
3.	Estimated number of people to be trained: 2500
4.	Evidence of Concurrence/Consultation with Line/State Departments (In case of regulated sectors): No, NIELIT is recognized as AB and AA under Government Category. NIELIT is an HRD arm of MeitY, therefore, the Line Ministry Concurrence is not required.

Section 5: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name.

1.	Annexure: NCrF/NSQF level justification based on NCrF/NSQF descriptors (<i>Mandatory</i>)	Available at Annexure-I: Evidence of Level
2.	Annexure: List of tools and equipment relevant for NOS (<i>Mandatory, except in case of online course</i>)	Available at Annexure-II: Tools and Equipment
3.	Annexure: Industry Validation	Available at Annexure-III: Industry Validation
4.	Annexure: Training Details	Available at Annexure-IV: Training Details
5.	Annexure: Blended Learning (<i>Mandatory, in case the selected Mode of delivery is Blended Learning</i>)	Available at Annexure-V: Blended Learning
6.	Annexure/Supporting Document: Standalone NOS- Performance Criteria Details Annexure/Document with PC-wise detailing as per NOS format (<i>Mandatory- Public view</i>)	Available at Annexure-VI: Performance Criteria
7.	Annexure: Performance and Assessment Criteria (<i>Mandatory</i>)	Available at Annexure-VII: Detailed Assessment Criteria
8.	Annexure: Assessment Strategy (<i>Mandatory</i>)	Available at Annexure-VIII: Assessment Strategy
9.	Annexure: Acronym and Glossary (<i>Optional</i>)	Available at Annexure-IX: Acronym and Glossary
10.	Supporting Document: Model Curriculum	Available at Annexure-A: Model Curriculum

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
Professional Theoretical Knowledge/Process	<ul style="list-style-type: none"> • Comprehensive understanding of networking fundamentals (OSI model, TCP/IP, sub-netting, VLSM). • Proficiency in cloud computing concepts, deployment models (private, public, hybrid), and virtualization technologies (VMware, Hyper-V, Oracle Virtual Box, Citrix, etc.). • Expertise in configuring and managing virtualized environments, cloud platforms (OpenStack, Kubernetes), and infrastructure services (IaaS). • Knowledge of security protocols for cloud infrastructure, including network, host, and application-level security. 	The qualification provides learners with in-depth theoretical and technical knowledge necessary for cloud and virtualization environments. It ensures they can deploy, manage, and secure virtualized infrastructure and cloud solutions, reflecting advanced process-oriented knowledge aligned with industry requirements	4
Professional and Technical Skills/ Expertise/ Professional Knowledge	Cloud and Virtualization Experts will be competent in identifying technical requirements regarding hardware, software, and other IT-related devices for providing virtualized services over the Cloud.	Graduates of this course will acquire the technical and professional expertise to excel in roles like cloud engineer, virtualization specialist, and infrastructure administrator, enabling them to build and manage virtualized/cloud solutions effectively	4
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	Develops the ability to design and implement tailored cloud and virtualization solutions. It fosters critical thinking, problem-solving, and entrepreneurial skills, empowering participants to address infrastructure challenges and launch cloud-based businesses or consulting services in dynamic IT environments.	The program develops a problem-solving mindset and industry-relevant skills, making learners job-ready and capable of launching entrepreneurial ventures in cloud computing and virtualization.	4
Broad Learning Outcomes/ Core Skill	This program equips learners with the skills and mindset required to meet industry expectations, become job-ready, and have the ability to manage cloud-based services, optimize infrastructure, and implement secure and scalable cloud solutions.	This qualification prepares learners to adapt to emerging technologies, address real-world challenges in cloud and virtualization environments, and contribute effectively to organizational goals.	4

Responsibility	<ul style="list-style-type: none"> Independently design, implement and manage virtualized and cloud environments. Ensure high availability, security, and performance of cloud infrastructure. Collaborate within teams to deliver reliable and scalable cloud solutions while adhering to industry best practices. 	The program ensures learners can take responsibility for the quality and reliability of cloud solutions, working both independently and in collaborative team settings.	4
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Annexure II: Tools and Equipment (lab set-up)

List of Tools and Equipment

Batch Size: **30**

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	Classroom	1 (30 Sq. m)	1
2	Students Chair	30	30
3	Students Table	15 (2 students sharing 1 table)	15
4	LCD Projector	1	-
5	Trainer Chair & Table	1	-
6	Pin up Boards	1	-
7	White Board	1	-
8	Desktop computer with accessories	Desktop PC's with at least 16 GB RAM with virtualization support enabled 1. Vmware Vsphere 2. Citrix Xenapp 3. Citrix receiver and monitor 4. ThinApp 5. Windows Server 6. Hyper-V 7. Oracle Virtual Box	30

		8. Openfiler	
9	Desk jet printer	A4	1

Classroom Aids:

The aids required to conduct sessions in the classroom are:

1. LCD Projector/Smart Board

Annexure III: Industry Validations/ Government Recognition Summary

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID
1	Say Technologies,	Surender Sharma	Lead Consultant	Airport Road, Karan Bagh, Jammu	9419194968	surender.sharma@saytechnologies.in
2	MBPK Traders Pvt Ltd	Praveen Kumar	Director	Bantalab, Jammu,	9419111577	Praveen.tony@gmail.com
3	Aditya Infotech Ltd.	Monishwar Kumar Sudan	Manager	H.No. 44 A Gandhi Nagr Jammu	9779150228	Monishwar_sudan@adityagroop.com
4	Sidhi Vinayak Academy	Tausif Alam	State Head	Shiv Narayan Kunj, B – Block, Shivaji Nagar, Hethu, Ranchi (JH)-	8789326361	info.sidhiacadmey@gmail.com
5	Lamzing Technologies Pvt. Ltd.	Ailan Maibam	Managing Director	Software Technology Park of India, Ground Floor MIMS Building, Manipur University, Canchipur.	9963382225	contact@lamzing.com

Annexure IV: Training Details

Training Projections:

Year	Estimated Training # of Total Candidates	Estimated training# of Women	Estimated training# of People with Disability
2025-26	800	400	25
2026-27	850	450	30
2027-28	850	450	30

Data to be provided year-wise for the next 3 years.

Annexure V: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools: NA

Annexure VI: Standalone NOS- Performance Criteria details

1. Description

The Certified Cloud Computing and Virtualization Expert course aims to provide comprehensive knowledge of cloud computing, networking, and virtualization. Participants will acquire skills to design, implement, and manage cloud infrastructure, virtualization platforms, and secured cloud environments. Through practical training on tools such as VMware, Hyper-V, Oracle VirtualBox, and Citrix, learners will understand key concepts and deploy cloud-based services. This course also emphasizes cloud security, communication skills, and preparation for managing infrastructure and software services in a cloud environment.

2. Scope

This qualification opens career opportunities for individuals in cloud architecture, virtualization management, cloud security, and IT infrastructure management. Graduates can work as cloud administrators, virtualization experts, cloud security specialists, and infrastructure managers across industries. Additionally, this certification helps individuals explore entrepreneurship by developing cloud-based services or consulting. By combining theoretical and practical knowledge, the course addresses the global demand for professionals skilled in cloud and virtualization technologies.

3. Elements and Performance Criteria:

Element 1: Networking and Cloud Computing Concepts

- **PC1:** Demonstrate understanding of basic networking concepts, types of networks, network components, and cables.
- **PC2:** Explain TCP/IP, OSI reference model, and IP addressing and subnetting techniques.
- **PC3:** Implement variable-length subnet mask (VLSM) and configure switching and routing protocols.
- **PC4:** Set up and configure Windows Server, Linux Server, and web servers in a networked environment.
- **PC5:** Understand cloud computing concepts, deployment models (Private, Public, Hybrid), and cloud service models (IaaS, PaaS, SaaS).
- **PC6:** Compare cloud computing with cluster computing and grid computing.
- **PC7:** Work with cloud services like Google Forms, OpenStack, Kubernetes, and other public cloud platforms.

Element 2: Preparation of Infrastructure Services

- **PC8:** Understand the need for virtualization and different types of virtualization (e.g., partial, para-virtualization, desktop, and software virtualization).
- **PC9:** Use virtualization tools like VMware, Oracle VirtualBox, Hyper-V, and Citrix to create virtual environments.
- **PC10:** Configure and manage virtual machines (VMs), VM templates, and storage using tools like ESXi server.
- **PC11:** Use vCenter Server for resource monitoring, clustering, high availability setup, and access control.
- **PC12:** Understand and implement scalability and storage solutions using Openfiler and other tools.

Element 3: Preparation of Software Services

- **PC13:** Install, configure, and manage XenApp for software service deployment.
- **PC14:** Create master images, configure app stores, and manage delivery agents.
- **PC15:** Publish desktops and applications, manage delivery groups, and set up StoreFront and Citrix Receiver.
- **PC16:** Implement ThinApp technology for software distribution in virtualized environments.

Element 4: Secured Cloud Management Concept

- **PC17:** Apply infrastructure security principles to cloud environments, including network, host, and application-level security.
- **PC18:** Manage data security and privacy concerns, including jurisdictional issues related to data storage and location.
- **PC19:** Implement Identity and Access Management (IAM) protocols and secure cloud access through authentication and authorization.
- **PC20:** Understand cloud security challenges, threats, and best practices for mitigating risks and attacks in cloud environments.

Element 5: Enhancing Communication Skills

- **PC21:** Develop verbal and non-verbal communication skills for effective workplace communication.
- **PC22:** Build and maintain professional relationships in a business environment, managing complex work relationships effectively.
- **PC23:** Prepare for interviews, including understanding interview formats, stages, and techniques like mock interviews and CV writing.
- **PC24:** Gain proficiency in managing career and professional relationships, using communication techniques to excel in interviews and career progression.

4. Knowledge Criteria (KCs)

- **KU1:** Understand key networking concepts, including types of networks, components, protocols, and IP addressing.
- **KU2:** Gain knowledge of cloud computing models (IaaS, PaaS, SaaS) and deployment models (Private, Public, Hybrid) and their practical applications.
- **KU3:** Learn about virtualization technologies, including VMware, Hyper-V, Oracle VirtualBox, and their implementation in cloud environments.
- **KU4:** Understand cloud security frameworks, including encryption, access controls, and data privacy concerns in cloud systems.
- **KU5:** Acquire knowledge of interview preparation techniques, communication strategies, and relationship management in professional settings.

5. Generic Skills (GS)

The user/individual on the job needs to know how to:

- **GS1:** Analyze and design cloud-based solutions, considering infrastructure needs, scalability, and security.
- **GS2:** Apply cloud computing and virtualization concepts to efficiently deploy and manage cloud services.
- **GS3:** Manage security risks and ensure compliance with industry standards in cloud systems, protecting infrastructure and data.
- **GS4:** Communicate technical concepts effectively, ensuring clarity in both verbal and written forms, especially when explaining complex cloud technologies to stakeholders.
- **GS5:** Work collaboratively in teams to manage cloud infrastructure, effectively supporting cloud deployments and troubleshooting issues.
- **GS6:** Prepare for interviews and career progression through strong communication, CV development, and personal brand management.

Annexure VII: Assessment Criteria

Detailed PC-wise assessment criteria and assessment marks for the NOS are as follows:

S. No.	Assessment Criteria for Performance Criteria	Theory (Marks)	Practical (Marks)	Project/OJT (Marks)	Employability Skills/Internal Assessment (Marks)
1	<p>Element 1: Networking and Cloud Computing Concepts</p> <ul style="list-style-type: none"> ● PC1: Demonstrate understanding of basic networking concepts, types of networks, network components, and cables. ● PC2: Explain TCP/IP, OSI reference model, and IP addressing and subnetting techniques. ● PC3: Implement variable-length subnet mask (VLSM) and configure switching and routing protocols. ● PC4: Set up and configure Windows Server, Linux Server, and web servers in a networked environment. ● PC5: Understand cloud computing concepts, deployment models (Private, Public, Hybrid), and cloud service models (IaaS, PaaS, SaaS). ● PC6: Compare cloud computing with cluster computing and grid computing. ● PC7: Work with cloud services like Google Forms, OpenStack, Kubernetes, and other public cloud platforms. 	30	18	6	5
2	<p>Element 2: Preparation of Infrastructure Services</p> <ul style="list-style-type: none"> ● PC8: Understand the need for virtualization and different types of virtualization (e.g., partial, para-virtualization, desktop, and software virtualization). ● PC9: Use virtualization tools like VMware, Oracle VirtualBox, Hyper-V, and Citrix to create virtual environments. ● PC10: Configure and manage virtual machines (VMs), VM templates, and storage using tools like ESXi server. ● PC11: Use vCenter Server for resource monitoring, clustering, high availability setup, and access control. ● PC12: Understand and implement scalability and storage solutions using Openfiler and other tools. 	20	14	4	4

3	<p>Element 3: Preparation of Software Services</p> <ul style="list-style-type: none"> ● PC13: Install, configure, and manage XenApp for software service deployment. ● PC14: Create master images, configure app stores, and manage delivery agents. ● PC15: Publish desktops and applications, manage delivery groups, and set up StoreFront and Citrix Receiver. ● PC16: Implement ThinApp technology for software distribution in virtualized environments. 	15	10	4	3	
4	<p>Element 4: Secured Cloud Management Concept</p> <ul style="list-style-type: none"> ● PC17: Apply infrastructure security principles to cloud environments, including network, host, and application-level security. ● PC18: Manage data security and privacy concerns, including jurisdictional issues related to data storage and location. ● PC19: Implement Identity and Access Management (IAM) protocols and secure cloud access through authentication and authorization. ● PC20: Understand cloud security challenges, threats, and best practices for mitigating risks and attacks in cloud environments. 	20	12	4	4	
5	<p>Element 5: Enhancing Communication Skills</p> <ul style="list-style-type: none"> ● PC21: Develop verbal and non-verbal communication skills for effective workplace communication. ● PC22: Build and maintain professional relationships in a business environment, managing complex work relationships effectively. ● PC23: Prepare for interviews, including understanding interview formats, stages, and techniques like mock interviews and CV writing. ● PC24: Gain proficiency in managing career and professional relationships, using communication techniques to excel in interviews and career progression. 	15	6	2	4	
200		Total Marks:	100	60	20	20

Annexure VIII: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

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 and Practical examinations.

About Examination Pattern:

1. The question papers for the theory exams are set by the Examination wing (assessor) of NIELIT HQS.
2. The assessor assigns the roll number.
3. The assessor carries out theory assessments. Theory examination will be conducted online, and the paper will comprise MCQ.
4. The assessor carries out practical assessments. A practical examination would be conducted 100% offline.
5. The pass percentage would be 50% marks.
6. 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 SMEs. Test rules are set beforehand. According to the syllabus, a random set of questions appears, which may differ from candidate to candidate. Confidentiality and impartiality are maintained during all the examination and evaluation processes.

Annexure IX: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework

Glossary

Term	Description
National Occupational Standards (NOS)	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.
Qualification	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
Qualification File	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.
Sector	A grouping of professional activities on the basis of their main economic function, product, service, or technology.