QUALIFICATION FILE

Software Programmer

☒ Short Term Training (STT) ☐ Long Term Training (LTT) ☐ Apprenticeship

☒ Upskilling ☐ Dual/Flexi Qualification ☐ For ToT

☐ For ToA

☒General ☐ Multi-skill (MS) ☐ Cross Sectoral (CS) ☐ Future Skill ☐ OEM

NCrF/NSQF Level: 4

Submitted By: Namrata Kapur

IT-ITeS Sector Skills Council NASSCOM (SSC NASSCOM)
Plot No. – 7, 8, 9 & 10
Sector – 126, Noida, Uttar Pradesh - 201303

Table of Contents

Section 1: Basic Details

1.	**Qualification Name**	**Software Programmer**	
2.	**Sector/s**	**IT/ITeS**	
3.	**Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐ OEM**	**NQR Code & version of the existing /previous qualification:** *QG-05-IT-01579-2023-V1.1-NASSCOM & Version 1*	**Qualification Name of the existing/previous version: Software Programmer**
4.	**Qualification Name** *(Wherever applicable)*	**Software Programmer**	
5.	**National Qualification Register (NQR) Code &Version** (*Will be issued after NSQC approval*)	**QG-05-IT-01579-2023-V1.1-NASSCOM & Version 1**	**6. NCrF/NSQF Level: 4**
7.	**Award (Certificate/Diploma/Advance Diploma/ Any Other** *(Wherever applicable specify multiple entry/exits also & provide details in annexure)*	Certificate	
8.	**Brief Description of the Qualification**	This qualification is about contributing to software programming where both the business impact and technical complexity are low.	
9.	**Eligibility Criteria for Entry for a Student/Trainee/Learner/Employee**	**Entry Qualification & Relevant Experience:** *Relevant Experience: Experience in Programming languages (Such as Python, HTML, CSS, Javascript etc.).The relevant experience would include work, internship, and apprenticeship after completing relevant educational qualifications. 12th Grade Pass with computer background OR 10th Grade Pass with 2 Years of relevant experience* OR Previous Relevant qualification of NSQF level 3 with 3 years of relevant experience* **Min Age: 16 Years**	

<table>
<tr><td>10.</td><td>Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))</td><td>13 Credits (Including 1 Elective)</td><td>11. Common Cost Norm Category (I/II/III) (wherever applicable): II</td></tr>
<tr><td>12.</td><td>Any Licensing Requirements for Undertaking Training on This Qualification (wherever applicable)</td><td colspan="2">NA</td></tr>
<tr><td>13.</td><td>Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)</td><td colspan="2">☒ Offline Only ☒ Online Only ☐ Blended
<table>
<tr><th>Training Delivery Mode</th><th>Theory (Hours)</th><th>Practical (Hours)</th><th>OJT (Mandatory) Hours</th><th>OJT (Recommended) Hours</th><th>Total (Hours)</th></tr>
<tr><td>Classroom (offline) with 1 Elective</td><td>120</td><td>120</td><td>150</td><td>-</td><td>390</td></tr>
<tr><td>Online with 1 Elective</td><td>120</td><td>120</td><td>150</td><td>-</td><td>390</td></tr>
</table>
(Refer Blended Learning Annexure for details)</td></tr>
<tr><td>14.</td><td>Aligned to NCO/ISCO Code/s (if no code is available mention the same)</td><td colspan="2">NCO-2015/ 2512.0100</td></tr>
<tr><td>15.</td><td>Progression Path After Attaining the Qualification, wherever applicable (Please show Professional and Academic progression)</td><td colspan="2">This entry should refer to one or more of the following:
Professional progression: access to related qualification(s) at the next NSQF level: Senior Programmer, Functional Developer, Software Developer, etc.</td></tr>
<tr><td>16.</td><td>Other Indian languages in which the Qualification & Model Curriculum are being submitted</td><td colspan="2">Hindi</td></tr>
<tr><td>17.</td><td>Is similar Qualification(s) available on NQR-if yes, justification for this qualification</td><td colspan="2">☐ Yes ☒ No URLs of similar Qualifications:</td></tr>
<tr><td>18.</td><td>Is the Job Amenable to Persons with Disability</td><td colspan="2">☒ Yes ☐ No
If “Yes”, specify applicable type of Disability:</td></tr>
</table>

19.	**How will participation of women be encouraged?**	The Program is gender neutral although to increase women's participation, organizations are keeping aside a few seats to encourage female candidates.	
20.	**Are Greening/Environment Sustainability Aspects covered** (*Specify the NOS/Module which Covers it)*	☐ **Yes** ☒ **No**	
21.	**Is Qualification suitable to be offered in Schools/Colleges**	**Schools:** ☒ **Yes** ☐ **No** **Colleges** ☒ **Yes** ☐ **No**	
22.	**Name and Contact Details Submitting / Awarding Body SPOC** *(In case of CS or MS, provide details of both Lead AB & Supporting ABs)*	**Name: Namrata Kapur** **Email: Namrata@nasscom.in** **Contact No.: 0120-4990111** **Website: https://nasscom.in**	
23.	**Final Approval Date by NSQC: 17th NOV 2022**	**24. Validity Duration: 3 Years**	**25. Next Review Date: 17th Nov 2025**

Section 2: Module Summary

NOS/s of Qualification

(In Exceptional cases these could be described as components)

Mandatory NOS/s:

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 training **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.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) *(if applicable)*
1.	Verify the specifications and contribute to the design of software program	SSC/N0509 V1.0	Core	4	02	36:00	24:00	00:00	00:00	60:00	41	59	-	-	100	15%
2.	Employability Skills (60 Hours)	DGT/VSQ/N0102 V1.0 NSQF Level 4	Non-Core	4	02	24:00	36:00	00:00	00:00	60:00	20	30	-	-	50	15%
Duration (in Hours) / Total Marks (A)					04	60:00	60:00	00:00	00:00	120:00	61	89			150	30%

Elective-1

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.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) *(if applicable)*
1.	Develop, test, and execute software programs as per specifications using Java	SSC/N0510 V1.0	Core	4	09	60:00	60:00	150:00	00:00	270:00	35	65	-	-	100	70%
Duration (in Hours) / Total Marks (B)					09	60:00	60:00	150:00	00:00	270:00	35	65	-	-	100	70%
Grand Total A+B					13	120:00	120:00	150:00	00:00	390:00	96	154	-	-	250	100%

Elective-2

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.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) *(if applicable)*
1.	Develop, test and execute software programs as per specifications using Python	SSC/N0511 V1.0	Core	4	09	60:00	60:00	150:00	00:00	270:00	35	65	-	-	100	70%
Duration (in Hours) / Total Marks (C)					09	60:00	60:00	150:00	00:00	270:00	35	65			100	70%
Grand Total A+C					13	120:00	120:00	150:00	00:00	390:00	96	154	-	-	250	100%

Elective-3

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.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) *(if applicable)*
1.	Write, test and execute programs in HTML5 to develop web or mobile applications as per specifications.	SSC/N0512 V1.0	Core	4	09	60:00	60:00	150:00	00:00	270:00	35	65	-	-	100	70%
Duration (in Hours) / Total Marks (D)					09	60:00	60:00	150:00	00:00	270:00	35	65	-	-	100	70%
Grand Total A+D					13	120:00	120:00	150:00	00:00	390:00	96	154	-	-	250	100%

Assessment - Minimum Pass Percentage – Aggregate at qualification level: 70 % (Every Trainee should score a specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)

Section 3: Training Related

1.	**Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	**Educational Qualification**: Graduate in any discipline. **Industry experience**: Minimum 2 year experience in Java/Python/HTML5 **Training experience**: Minimum 1-year experience Additional certification in specific software applications and related hardware configuration requirements**.**
2.	**Master Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	**Educational Qualification**: Graduate in any discipline. **Industry experience**: Minimum 2 year experience in Java/Python/HTML5 **Training experience**: Minimum 1-year experience

		Additional certification in specific software applications and related hardware configuration requirements**.**
3.	**Tools and Equipment Required for the Training**	☒Yes ☐No *(If "Yes", details to be provided in Annexure)*
4.	**In Case of Revised Qualification, details of Any Upskilling Required for Trainer**	NA

Section 4: Assessment Related

1.	**Assessor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	**Educational Qualification**: Graduate in any discipline. **Industry experience**: Minimum 2 years' experience in Java/Python/HTML5 **Training experience**: Minimum 1-year experience
2.	**Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines), (wherever applicable)*	**Educational Qualification**: Graduate in any discipline. **Industry experience**: Minimum 2 year experience in Java/Python/HTML5 **Training experience**: Minimum 1-year experience
3.	**Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	**Educational Qualification**: Graduate in any discipline. **Industry experience**: Minimum 2 year experience in Java/Python/HTML5 **Training experience**: Minimum 1-year experience
4.	**Assessment Mode** *(Specify the assessment mode)*	Can be either in the classroom or online
5.	**Tools and Equipment Required for Assessment**	☒ Same as for training ☐ Yes ☐ No *(details to be provided in Annexure-if it is different for Assessment)*

Section 5: Evidence of the Need for the Qualification

Provide Annexure/Supporting documents name.

1.	Latest Skill Gap study (not older than 2 years) (Yes/No): Yes
2.	Latest Market Research Reports or any other source (not older than 2 years) (Yes/No): Yes
3.	Government/Industry initiatives/requirement (Yes/No): Yes
4.	Number of industry validations provided: 30
5.	Estimated number of people to be trained and employed: Yes
6.	Evidence of Concurrence/Consultation with Line/State Departments: Yes If "No", why:

Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	**Annexure:** NCrF/NSQF level justification based on NCrF/NSQF descriptors *(Mandatory)*	Evidence of Level
2.	**Annexure:** List of tools and equipment relevant for NOS *(Mandatory, except in case of online course)*	Tools and Equipment (lab set-up)
3.	**Annexure:** Detailed Assessment criteria *(Mandatory)*	Performance Criteria Details
4.	**Annexure:** Assessment Strategy *(Mandatory)*	Assessment Strategy
5.	**Annexure:** Blended Learning *(Mandatory, in case selected Mode of delivery is Blended Learning)*	NA

6.	**Annexure:** Multiple Entry Exit Details *(Mandatory, in case qualification has multiple entry-exit)*	NA
7.	**Annexure:** Acronym and Glossary *(Optional)*	NA
8.	**Supporting Document:** Model Curriculum *(Mandatory-Public View)*	MC_SSCQ0510-Software Programmer_V1.0
9.	**Supporting Document:** Career Progression *(Mandatory-Public View)*	Occupational Map – ITS
10.	**Supporting Document:** Occupational Map *(Mandatory)*	Occupational Map - ITS
11.	**Supporting Document:** Assessment SOP *(Mandatory)*	Assessment Strategy
12.	**Any Other document you wish to submit:**	NA

Annexure: 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 knowledge	• Develop software code to specification. • Manage your work to meet requirements. • Work effectively with colleagues • Maintain a healthy, safe, and secure working environment. • Provide data/information in standard formats. • Maintain an inclusive, environmentally sustainable workplace	Individual at this job requires a well-developed skill, to contribute to the design of software products and applications & develop software code to specification. Individuals at this job are responsible for programming applications and interfaces. The job also involves debugging, testing and documentation.	4
Professional and Technical Skills/ Expertise/ Professional Knowledge	• Standard operating procedures of the organization's policies, procedures, and guidelines for creating documents for knowledge sharing	Individuals at this job need to have factual and theoretical knowledge context of the field of work, to contribute to	4

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
	• How to access and update organization's knowledge base • The purpose and scope of the work to be carried out and the importance of keeping within these boundaries • The importance of receiving, collating, analyzing, and implementing feedback on the work output KU5. standard templates and tools available and how to use these to document the designs • The approval process for designs of software products and applications • How to design basic program structures, software products and software applications • Different sources of information to help design software products and specifications • Common design defects and how to resolve these • Current practice in the infrastructure design of software products and applications • The range of activities involved in designing different software products and applications • How to test new products and applications are fit for purpose • Implications new products and applications may have on business processes and business infrastructure • The scope of work to be executed and the importance of keeping within the level of own competency and authority • The importance of collating feedback on coding and UTCs • How to analyse and use feedback to improve coding and UTCs • Whom to be involved to provide feedback on the coding and UTCs • Organization's approval process for software code designs • The process for converting technical specifications into code	the design of software products and applications& develop software code to specification. He/she needs to know & understand: • How to interpret and follow different design specifications, including Business Requirements Specification (BRS), User Requirements Specification (URS), Software Requirements Specification (SRS) & High-Level Design (HLD) • How to design basic program structures, software products & software applications	

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
	• Current practice in the infrastructure design of software code • How to write software code that is efficient, readable, and maintainable • How to use the range of code generation tools and unit testing tools for developing software code • How to create, review and execute UTCs • How to determine whether components are suitable for re-use • Different types of problems and defects that may occur during coding and their solution • How recording corrective actions for problems and defects can improve future designs • How to test and debug new software code • Different sources of information for help to write software code		
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	• Produce work output in prescribed format with accurate details • Draw a conclusive plan to complete the tasks within given deadlines • Apply problem-solving approaches in different situation • Configure data and disseminate relevant information and constructive opinions, applying balanced judgments to different situations • Practice utilizing information technology efficiently to insert or extract data accurately • The importance of collating feedback on coding and UTCs • How to analyse and use feedback to improve coding and UTCs • Whom to be involved to provide feedback on the coding and UTCs • Organization's approval process for software code designs • The process for converting technical specifications into code	Individuals at this job need to have cognitive and practical skills required for development of software applications and interfaces as well as enhancements to existing packaged applications or pre-engineered templates. He/she needs to know & understand: • organization's policies, procedures, and guidelines for designing software products and applications • the scope of work to be carried out and the importance of keeping within these boundaries • the importance of collating feedback on your coding and UTC's	4

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
	• Current practice in the infrastructure design of software code • How to write software code that is efficient, readable, and maintainable • How to use the range of code generation tools and unit testing tools for developing software code • How to create, review and execute UTCs • How to determine whether components are suitable for re-use • Different types of problems and defects that may occur during coding and their solution • How recording corrective actions for problems and defects can improve future designs • How to test and debug new software code • Different sources of information for help to write software code	• how to analyse and use feedback to improve your coding and UTCs • who you may need to involve providing feedback on your coding and UTC's organization's approval process for software code designs	
Broad Learning Outcomes/Core Skill	• Listen actively and communicate with others orally and in writing • Work in a customer facing environment with peers to build and maintain positive and effective relationships with customers to meet their requirements	Individuals at this job should have mathematical skills to plan and organize work to achieve targets and deadlines. He/she needs to apply problem solving approaches in different situations & make decisions on suitable course of action The individual should be result oriented. The individual should also be able to demonstrate skills for communication and logical thinking. The core & generic job skills to collecting and organising information, communication that an individual should have, will help him/her understand & manage assigned works in the context of the social environment of the customer	4
Responsibility	• Functional and non-functional software requirements	Individuals at this job are responsible for developing software applications and interfaces and enhancements to	4

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
	• Selection of technical solutions of software related issues and backing rationales through proper usage of High-Level Design (HLD) • Seek guidance and advice from peers or supervisors • Requirements to prepare High Level Design (HLD) • Checklists for coding standards of programming structure	existing packaged applications or pre-engineered templates. The job also involves providing support to custom applications, debugging, maintenance and documentation. This job requires the individual to work independently and be comfortable in making decisions pertaining to his/her area of work. These tasks will require the individual to take responsibility of his/her own work and learning.	

Annexure: Tools and Equipment (lab set-up)

Batch Size:

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	PC/Laptop with internet	With Wifi (2MBPS Dedicated)	1 Unit per Trainee
2	Microphone/Voice System	For lecture & class activities	1 Unit for Trainer
3	White Board		1 Unit for Trainer
4	White Board Maker		1 Unit for Trainer
5	Projector		1 Unit

Annexure: Industry Validations Summary

Provide summary information of all the industry validation in table. This is not required for OEM Qualifications.

S. No	Organisation Name	Representative Name	Designation	Address	Phone No	E-mail ID	LinkedIn Profile (if available)
1	iAccept Softwares Pvt Ltd	B Mohan Kumar	Founder	-	9845208784	mohan@iaccept.in	
2	Borlaug Web Services	Ayon Hazra	Founder and CEO	-	9163631177	ayon@borlaug.ws	
3	Marvell	Narendra Nande	Director – Software/Firmware Engg, Security Solutions,	-	9900086708	nnande@marvell.com	
4	Mphasis	Ishani Mishra	Senior Analyst	-	8939673517	Ishani.Mishra@mphasis.com	
5	IBM India	Arpita Majumder	Senior Advisory Consultant	-	7894369677	arpita.majumder@ibm.com	
6	Tride	Madhav Reddy	Founder & CEO	-	8499989071	madhav@tridemobility.com	
7	LnT Infotech	Lalitha Gandham	Data Engineer	-	9494420942	Lalitha.gandham@lntinfotech.com	
8	SAP	Archana Murali	Development Manager	-	9620332160	a.murali@sap.com	
9	Cloudstarts	Pooja Gupta	Vice President-Shared Services	-	7506661890	pooja.gupta@cloudstrats.com	
10	Meesho	Rahil Muneer	Program Manager	-	9494194306	rahil.muneer@meesho.com	
11	IBM	Latha Raj	Program Director – Talent Consultant	-	9845288467	rlatha@in.ibm.com	
12	Draup Business Solution Pvt Limited	Mahabub Alam	Solution Architect	-	9731517171	mahabubprof@gmail.com	
13	3i Infotech	Rishi Agarwal	SVP and Global Delivery Head – Automations, Applications and Analytics	-	7702191049	rishi.agrawal@3i-Infotech.com	

14	MMT	Ajay Naidu Dirisala	Senior Software Engineer-1	-	-	ajay.naidu@go-mmt.com	
15	iprintmythings	Avikshit Saras	COO	-	9810163654	3dinfo@iprintmythings.com	
16	Amazon	Manu Agrawal	SDE2	-	7752957673	manuagra@amazon.com	
17	Accenture	Manoj Kewat	Solution Architect	-	-	manoj.chedilal.kewat@accenture.com	
18	Technotackle	Balavishnu	Founder	-	9600777989	balavishnu@technotackle.com	
19	Rudder Labs India Pvt. Ltd.	Thrinadh Kumpatla	Site Reliability Engineer	-	-	thrinadh@rudderstack.com	
20	Optum Global Solutions	Saurabh Chaudhary	Assistant Director	-	9873862022	Schaudhary2212@gmail.com	
21	Toyota	Lavanya Narayanan	Information Security Engineer	-	-	lavanya0812@gmail.com	
22	Advisory Feedback	Mohit Sharma	Manager	-	88000 91932	mohit@advisoryfeedback.com	
23	Turia.ai	Rahul Bhojwani	Founder	-	-	rahul@turia.ai	
24	Raksul	Abhijit S	Sr. Full Stack Architect	-	8179411116	abhijith1293@gmail.com	
25	DataMatics	Shashi Bhargava	Executive Vice President	-	9821246092	shashi.bhargava@datamatics.com	
26	Redhat	Sanjay Srivastava	Head-Public Sector	-	9818677688	sansriva@redhat.com	
27	Skillsda	Kottaram Ramesh	Director- Engineering	-	9500123029	ram@skillsda.com	
28	GrowthSource	Priya Gandhi	Chief Revenue Officer	-	9820870138	priya@growthsource.in	
29	Words worth Solutions	Prithviraj Karmakar	Co Founder	-	9836834497	prithviraj@wordsworthsolutions.co.in	
30	Alacriti Infosystems Private Limited	Jagdish Babu Chalamala	HR Manager	-	7093893535	jagadishbabu.chalamala@alacriti.com	

Annexure: Training & Employment Details

Training & Employment Projections:

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employed Opportunities	Estimated Training #	Estimated Employed Opportunities	Estimated Training #	Estimated Employed Opportunities
2023-24						
2024-25						
2025-26						

#The Estimated Data is an average for each state.

Training, Assessment, Certification, and Placement Data for previous versions of qualifications:

Qualification Version	Year	Total Candidates			Women			People with disability		
		Trained	Assessed	Certified	Trained	Assessed	Certified	Trained	Assessed	Certified
	2022-23									

Content availability for the previous version of qualifications:

☐ Participant Handbook ☐ Facilitator Guide ☐ Digital Content ☐ Qualification Handbook ☐ Any Other:

Language in which content is available:

Annexure: 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	Project Marks	Viva Marks
SSC/N0509:	PC1. Understand the business context and business/ end-user requirements for the program	7	13	-	-

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Verify the specifications and contribute to the design of the software program.	PC2. Understand functional and non-functional requirements for the program	7	13	-	-
	PC3. Interpret the high-level and low-level design parameters using appropriate sources	7	13	-	-
	PC4. Participate in the design of software program	7	13	-	-
	PC5. Understand the project management frameworks used (agile methodologies and design thinking principles) in planning the software program	6	3	-	-
	PC6. Keep track of the latest technological developments related to programming and identify their potential applications in your business domain	7	4	-	-
	Total Marks	**41**	**59**	**-**	**-**
DGT/VSQ/N0102 Employability NOS for 60 Hours	PC1. Introduction to Employability Skills	1	1	-	-
	PC2. Constitutional values – Citizenship	1	1	-	-
	PC3. Becoming a Professional in the 21st Century	2	4	-	-
	PC4. Basic English Skills	2	3	-	-
	PC5. Career Development & Goal Setting	1	2	-	-
	PC6. Communication Skills	2	2	-	-
	PC7. Diversity & Inclusion	1	2	-	-
	PC8. Financial and Legal Literacy	2	3	-	-
	PC9. Essential Digital Skills	3	4	-	-
	PC10. Entrepreneurship	2	3	-	-
	PC11. Customer Service	1	2	-	-
	PC12. Getting Ready for Apprenticeship & Jobs	2	3	-	-
	Total Marks	**20**	**30**	**-**	**-**

Elective-1

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
SSC/N0510: Develop, test and execute software programs as per specifications using Java.	PC1. Check the design and code specifications for the program to be developed	4	6	-	-
	PC2. Define the objectives and functionality of the Java program, and align it to design specifications	4	8	-	-
	PC3. Develop and execute software code for various applications in Java components, where available	10	20	-	-
	PC4. Implement coding best practices such as reusability, naming conventions, portability, etc.	4	8	-	-
	PC5. Create appropriate test cases and test the Java program	6	10	-	-
	PC6. Debug the code and review the code with appropriate stakeholders	5	9	-	-
	PC7. Maintain a record of test cases, software program, exception handling, reusable modules, etc	2	4		

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	Total Marks	**35**	**65**	**-**	**-**

Elective-2

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
SSC/N0511: Develop, test and execute software programs as per specifications using Python.	PC1. Check the design and code specifications for the program to be developed	4	6	-	-
	PC2. Define the objectives and functionality of the Python program, and align it to design specifications	4	8	-	-
	PC3. Develop and execute software code for various applications in Python components, where available	10	20	-	-
	PC4. Implement coding best practices such as reusability, naming conventions, portability, etc.	4	8	-	-
	PC5. Create appropriate test cases and test the Python program	6	10	-	-
	PC6. Debug the code and review the code with appropriate stakeholders	5	9	-	-
	PC7. Maintain a record of test cases, software program, exception handling, reusable modules, etc	2	4		
	Total Marks	**35**	**65**	**-**	**-**

Elective-3

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
SSC/N0512: Write, test and execute programs in HTML5 to develop web or mobile applications as per specifications	PC1. Check the design specifications for the web or mobile app to be developed	4	6	-	-
	PC2. Define the objectives and functionality of the program and align it to design specifications	4	8	-	-
	PC3. Develop and execute software code for various web/ mobile pages and applications using HTML5 in conjunction with CSS, Javascript, jQuery, etc.	10	20	-	-
	PC4. Implement coding best practices such as reusability, naming conventions, portability, etc.	4	8	-	-
	PC5. Create appropriate test cases and test the web or mobile app	6	10	-	-
	PC6. Debug the code and review the code with appropriate stakeholders	5	9	-	-
	PC7. Maintain a record of test cases, software program, exception handling, reusable modules,etc	2	4		
	Total Marks	**35**	**65**	**-**	**-**

Annexure: 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 System Overview

A uniform assessment of job candidates per industry standards facilitates the industry's progress by filtering employable individuals while simultaneously providing candidates with an analysis of personal strengths and weaknesses.

Assessment Criteria

The Sector Skill Council will create criteria for assessment for each Qualification Pack. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down the proportion of marks for Theory and Skills Practical for each PC. The assessment for the theory part will be based on a knowledge bank of questions created by the SSC. Assessment will be conducted for all compulsory NOS and where applicable, on the selected elective/option NOS/set of NOS.

Guidelines for Assessment			
Testing Environment	**Tasks and Functions**	**Productivity**	**Teamwork**
• Carry out assessments under realistic work pressures found in the normal industry workplace (or simulated workplace). • Ensure that the range of materials, equipment, and tools that learners use are current and of the type routinely found in the normal industry workplace (or simulated workplace) environments.	• Assess that all tasks and functions are completed in a way, and to a timescale that is acceptable in the normal industry workplace. • Assign workplace (or simulated workplace) responsibilities that enable learners to meet the requirements of the NOS.	• Productivity levels must be checked to ensure that it reflects those that are found in the work situation being replicated.	• Provide situations that allow learners to interact with the range of personnel and contractors found in the normal industry workplace (or simulated workplace).

Annexure: 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
OJT	On Job Training

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 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 about 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 based on their main economic function, product, service, or technology.

Annexure: Market Research & Gap Analysis

While collecting data from the companies for the occupational map, inputs from various NASSCOM members, esp. SME firms (Small and Medium Enterprises) revealed that there is an increasing demand for learning content on standard programming languages like Java, C++, ASP.Net, HTML5 etc. It was also observed that just the top 15 software service companies hire more than 1 lakh freshers who are skilled in these programming languages.

The Indian IT industry accounted for 7.4% of India's GDP in 2021-22. Its revenue was estimated to have reached US$ 194 billion in FY21, an increase of 2.3% YoY. The sector has been the largest employer within the private sector. To capture the immense opportunity presented by the demand for programming skills, SSC NASSCOM has developed occupational standards for "Programmer" job role and wishes to provide this industry content for free. The assessments created for each of these popular programming languages will help enterprises significantly in providing skilled, certified workforce, thereby, reducing their hiring cycles.

Annexure: Government/Industry initiatives/requirement

Annexure: Evidence of Concurrence/Consultation with Line/State Departments: