QUALIFICATION FILE

Certificate Course in Coding Skills

☒ 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 Skills ☐ OEM

NCrF/NSQF Level: 5

Submitted By:

Additional Skill Acquisition Programme Kerala

KINFRA Film & Video Park, Sainik School P.O, Kazhakootam, Trivandrum, Kerala - 695585

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Section 1: Basic Details

<table>
<tr><td>1.</td><td>Qualification Name</td><td colspan="2">Certificate Course in Coding Skills</td></tr>
<tr><td>2.</td><td>Sector/s</td><td colspan="2">IT-ITeS</td></tr>
<tr><td>3.</td><td>Type of Qualification: ☐ New ☐ Revised ☐ Has Electives/Options
☐OEM</td><td>NQR Code & version of existing/previous qualification: (change to previous, once approved)

QG-05-IT-02840-2024-V1.1-ASAP</td><td>Qualification Name of existing/previous version:

Certificate Course in Coding Skills</td></tr>
<tr><td>4.</td><td>a. OEM Name
b. Qualification Name
(Wherever applicable)</td><td colspan="2">Certificate Course in Coding Skills</td></tr>
<tr><td>5.</td><td>National Qualification Register (NQR) Code &Version
(Will be issued after NSQC approval)</td><td>QG-05-IT-02840-2024-V1.1-ASAP</td><td>6. NCrF/NSQF Level: 5</td></tr>
<tr><td>7.</td><td>Award (Certificate/Diploma/Advance Diploma/ Any Other (Wherever applicable specify multiple entry/exits also & provide details in annexure)</td><td colspan="2">Certificate</td></tr>
<tr><td>8.</td><td>Brief Description of the Qualification</td><td colspan="2">Individuals at this job are responsible for developing applications and platforms in any language in order to build a robust hack free system. They will be responsible for evaluating the technical performance of algorithmic models on the system on which it is being deployed. They will be responsible for developing, designing, building, testing and deploying programming solutions.</td></tr>
<tr><td>9.</td><td>Eligibility Criteria for Entry for Student/Trainee/Learner/Employee</td><td colspan="2">a. Entry Qualification & Relevant Experience:

<table>
<tr><th>S. No.</th><th>Academic/Skill Qualification (with Specialization - if applicable)</th><th>Required Experience (with Specialization - if applicable)</th></tr>
<tr><td>1.</td><td>Students pursuing Engineering Degree & should have completed 5 semesters.</td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
</table>
b. Age: <Please specify age only in case of any legal restrictions></td></tr>
<tr><td>10.</td><td>Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))</td><td>9</td><td>11. Common Cost Norm Category (I/II/III) (wherever applicable): CCN 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>
</table>

<table>
<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="3">☒Offline ☐Online ☐Blended
<table>
<tr><th>Training Delivery Modes</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)</td><td>66</td><td>204</td><td></td><td></td><td>270</td></tr>
<tr><td>Online</td><td></td><td></td><td></td><td></td><td></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="3">NCO- 2512.0800, Programmer, Engineering and Scientific</td></tr>
<tr><td>15.</td><td>Progression path after attaining the qualification (Please show Professional and Academic progression)</td><td colspan="3">VERTICAL PROGRESSION
Engineer Trainee ? Project Engineer ? Module Lead ? Development Manager
HORIZONTAL PROGRESSION
Trainee Coder ? Programming Research ? Consultant/Entrepreneur</td></tr>
<tr><td>16.</td><td>Other Indian languages in which the Qualification & Model Curriculum are being submitted</td><td colspan="3">Hindi</td></tr>
<tr><td>17.</td><td>Is similar Qualification(s) available on NQR-if yes, justification for this qualification</td><td colspan="3">☐ Yes ☒ No URLs of similar Qualifications:</td></tr>
<tr><td>18.</td><td>Is the Job Role Amenable to Persons with Disability</td><td colspan="3">☐ Yes ☒ No
If “Yes”, specify applicable type of Disability:</td></tr>
<tr><td>19.</td><td>How Participation of Women will be Encouraged</td><td colspan="3"></td></tr>
<tr><td>20.</td><td>Are Greening/ Environment Sustainability Aspects Covered (Specify the NOS/Module which covers it)</td><td colspan="3">☐ Yes ☒ No</td></tr>
<tr><td>21.</td><td>Is Qualification Suitable to be Offered in Schools/Colleges</td><td colspan="3">Schools ☒ Yes ☐ No Colleges ☒ Yes ☐ No</td></tr>
<tr><td>22.</td><td>Name and Contact Details of Submitting / Awarding Body SPOC
(In case of CS or MS, provide details of both Lead AB & Supporting ABs)</td><td colspan="3">Name: Dr. Usha Titus
Email: cmd@asapkerala.gov.in Contact No.: 04712772500
Website: www.asapkerala.gov.in</td></tr>
<tr><td>23.</td><td>Final Approval Date by NSQC: 25th NSQC, Dated: 25th June, 2020</td><td>24. Validity Duration: 6 Years</td><td colspan="2">25. Next Review Date: March 2026</td></tr>
</table>

Section 2: Module Summary

NOS/s of Qualifications

(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 **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.	Design Thinking	ASP/SSC/N0201	Core	5	1	12	18			30	20	20		10	50	
2.	Logical Thinking	ASP/SSC/N0202	Core	5	1	06	24			30	20	20		10	50	
3.	Programming	ASP/SSC/N0203	Core	5	2	04	56			60	25	25		10	60	
4.	Community Linking	ASP/SSC/N0204	Core	5	1	08	22			30	20	20		10	50	
5.	Design of Software	ASP/SSC/N0205	Core	5	1	06	24			30	25	25		10	60	
6.	Project Development	ASP/SSC/N0206	Core	5	2	00	60			60	60	60		10	130	
7.	Employability Skills	DGT/VSQ/N0101	Core	5	1	30				30						
Duration (in Hours) / Total Marks					9	66	204	120		270	170	170		60	400	

Elective NOS/s: NA

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.																
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)*
Duration (in Hours) / Total Marks																

Optional NOS/s: NA

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.																
2.																
Duration (in Hours) / Total Marks																

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.)*

Minimum Pass Percentage – NOS/Module-wise: 50% *(Every Trainee should score specified minimum passing percentage in each mandatory and selected elective NOS/Module 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)*	**B.Tech in Computer Science/IT with 5+ of Experience**
2.	**Master Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	**B.Tech in Computer Science/IT with 7+ of Experience**
3.	**Tools and Equipment Required for Training**	☒Yes ☐No *(If "Yes", details to be provided in Annexure)*
4.	**In Case of Revised Qualification, Details of Any Upskilling Required for Trainer**	

Section 4: Assessment Related

1.	**Assessor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	**B.Tech in Computer Science/IT with 10+ of Experience**
2.	**Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	**B.Tech in Computer Science/IT with 10+ of Experience**
3.	**Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	**B.Tech in Computer Science/IT with 10+ of Experience**
4.	**Assessment Mode** *(Specify the assessment mode)*	**Offline**
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 validation provided: 2**
5.	**Estimated nos. of persons to be trained and employed: NA**
6.	**Evidence of Concurrence/Consultation with Line Ministry/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 level/NSQF descriptors *(Mandatory)*	*Annexure 1*
2.	**Annexure:** List of tools and equipment relevant for qualification *(Mandatory, except in case of online course)*	*Annexure 2*
3.	**Annexure:** Detailed Assessment Criteria *(Mandatory)*	*Annexure 6*

4.	**Annexure:** Assessment Strategy *(Mandatory)*	*Annexure 7*
5.	**Annexure:** Blended Learning *(Mandatory, in case selected Mode of delivery is "Blended Learning")*	*Annexure 5*
6.	**Annexure:** Multiple Entry-Exit Details *(Mandatory, in case qualification has multiple Entry-Exit)*	-
7.	**Annexure:** Acronym and Glossary *(Optional)*	*Annexure 8*

Annexure 1: 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	• Develop proficiency in computer programming to solve real time problems by utilizing design and logical thinking approaches. • Nurture design thinking approach for problem solving with an orientation towards sustainability. • Ability to understand problems and apply logical thinking practices. • Explore Python programming and its wide scope and develop standard coding practices. • Understand the foundations of database and SQL.	The individual will learn core aspects in computer programming through practicing design thinking and logical thinking approaches. With the domain knowledge acquired and practical skills of exploring programming language will support individuals to write programs to solve problems. Utilization of agile software development methodology and community support will enable optimal and efficient development of software. Through industrial interaction and hackathon individuals will get an exposure towards real world development of software which will equip them to make	5

	• Develop software by following agile methodology and utilizing tools for community linking • Ability to understand industrial level software development through industry interaction and hackathon.	clear choice of procedures in familiar and unfamiliar contexts.	
Professional and Technical Skills/ Expertise/ Professional Knowledge	• Acquire a comprehensive knowledge about IR 4.0 technologies and opportunities. Knowledge of basic approaches n design thinking and sustainability. • Understand logical thinking practices towards problem solving • Knowledge of interactive tools for learning programming concepts. • Understand Python programming constructs and coding practices. • Knowledge of open-source collaboration platforms and tools • Understanding of Agile software development methodology.	The individual must have knowledge in facts, principles and different constructs in Python programming. Design thinking and logical thinking approach towards teaching programming will enable individuals to learn concepts and principles with ease. Knowledge about IR 4.0 trends together with design thinking approach and coding skills will help individuals to approach problems from varying perspectives.	5
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	• Updating knowledge about trends and opportunities in IR 4.0 technologies. • Orienting towards design thinking and sustainability. • Ability to understand and device solution for a given problem by utilizing practical skills in logical thinking. • Selecting and applying basic Python programming constructs and coding practices to solve the given problem.	The individual in the role must acquire constructs of Python programming and apply different constructs in varying environments for problem solving. Problem solving skills are induced through design thinking and logical thinking approaches. This knowledge together with systematic development strategies and community support will help in practical problem solving.	5

	• Utilizing open-source community help for troubleshooting by utilizing online platforms and tools. • Practice and utilize agile software development methodology.		
Broad Learning Outcomes/Core Skill	• Utilize design thinking and logical thinking approaches for Problem solving. • Good logical and mathematical Skill. • Understanding of social political and natural environment. • Organization of information, communication and presentation Skill. • Develop software code using python programming language. • Practice agile methodology for Software development.	The individual must apply his/her software development skills along with a sound understanding of client requirements, technological and regulatory trends. This would enable him/her to build code effectively in line with industry best Practices.	5
Responsibility	• Getting updated to technological trends in IR 4.0. • Make decisions on suitable courses of action. • Apply balanced judgments to different situations. • Responsibility for output of group and individual development. • Listen effectively and orally communicate information accurately with attention to details. • Check your work is complete and free from errors. • Ask for clarification and advice from open-source community. • Build and maintain positive and effective relationships with clients	The role demands working in a team to deploy algorithmic models. This may involve helping peers with their work from time to time and providing feedback and advice to help improve the quality of their work. Since this role is likely to have people reporting to it, the individual performing this role is supposed to take responsibility for the output and the development of the entire team.	5

	• Check that own and/or peers work meets customer requirements • Plan and organize own work to achieve targets and deadlines. • Work with colleagues to deliver shared goals. • Organizing and coordinating Technological events.		

Annexure 2: 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	**Lab equipped with the following: -** • PCs/Laptops • Internet with Wi-Fi (Min 2 Mbps Dedicated)		30
2	Latest version of statistical software packages and IDEs		

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Live Class & PPT Presentation

Annexure 3: Industry Validations Summary

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

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile *(if available)*
1	Centre for Development & Advanced Computing	Balan C	Associate Director	PB No 6520, Vellayambalam, Thiruvananthapuram - 695033	0471-2723333		
2	VisionCog Research &	Dr. Ram Prasad K	Director	Civil Station Road, Peroorkada,	7356135445	ram.krish@visioncog.com	

	Development Pvt Ltd.			Thiruvananthapuram - 695005			

Annexure 4: 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

Data to be provided year-wise for next 3 years

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

Qualification Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed

Applicable for revised qualifications only, data to be provided year-wise for past 3 years.

List Schemes in which the previous version of Qualification was implemented:

1.
2.

Content availability for previous versions of qualifications:

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

Languages in which Content is available: *English*

Annexure 5: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools*: Not Applicable*

Refer NCVET "Guidelines for Blended Learning for Vocational Education, Training & Skilling" available on:
https://ncvet.gov.in/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education,%20Training%20&%20Skilling.pdf

S. No.	Select the Components of the Qualification	List Recommended Tools – for all Selected Components	Offline : Online Ratio
1	☐ Theory/ Lectures - Imparting theoretical and conceptual knowledge		
2	☐ Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners		
3	☐ Showing Practical Demonstrations to the learners		
4	☐ Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training		
5	☐ Tutorials/ Assignments/ Drill/ Practice		
6	☐ Proctored Monitoring/ Assessment/ Evaluation/ Examinations		
7	☐ On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training		

Annexure 6: 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
ASP/SSC/N0201 -Design Thinking	IR 4.0 Exploration and Mind mapping	5	5		
	Setting Up Platform Skills for Design Thinking & Orientation towards Sustainability	5	5		
	Design Thinking in Practice	5	5		
	Launchpad	5	5		
	Total Marks	**20**	**20**		**10**
ASP/SSC/N0202 – LogicalThinking	Logical Puzzles and Games	5	5		

	Classroom activities (RoboQuest)	5	5		
	Roboquest Part II	5	5		
	Online Interactive Tool	5	5		
	Total Marks	**20**	**20**		**10**
ASP/SSC/N0203 - Programming	Introduction to Programming: The What, Why & How of Programming.	5	5		
	Exploring the possibilities	5	5		
	Dive into Programming - Python Basics & Application of Python.	5	5		
	Coding Artist	5	5		
	Introduction to database and SQL	5	5		
	Total Marks	**25**	**25**		**10**
ASP/SSC/N0204 – Community Linking	Power of Collaboration	5	5		
	Open-Source Exploration	5	5		
	GitHub Master	5	5		
	The Helping Hands	5	5		
	Total Marks	**20**	**20**		**10**
ASP/SSC/N0205 – Design of Software	Design of Software Understanding the importance of Software Designing. How big companies does the magic?	5	5		
	Waterfall vs Agile	5	5		
	Software Testing and Project Management tools.	5	5		
	Agile Development Demo by students	5	5		
	Come with a project idea for the next week.	5	5		
	Total Marks	**25**	**25**		**10**

ASP/SSC/N0206 – Project Development	Project Planning and Work Division	10	10		
	Project Requirement and Design	10	10		
	Implementation & Testing	10	10		
	Project Presentation	30	30		
	Total Marks	**60**	**60**		**10**
Grand Total		**170**	**170**		**60**

Annexure 7: 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.

Mention the detailed assessment strategy in the provided template.

1. Assessment System Overview:
   - Batches assigned to the assessment agencies for conducting the assessment on SIP or email - **Email, Through SIP for TP Managed Courses**
   - Assessment agencies send the assessment confirmation to VTP/TC looping SSC - **NA**
   - Assessment agency deploys the ToA certified Assessor for executing the assessment – **Yes.**
   - SSC monitors the assessment process & records – **Yes.**
2. Testing Environment:
   - Check the Assessment location, date and time - **Yes.**
   - If the batch size is more than 30, then there should be 2 Assessors- **Yes**.
   - Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct -**Yes.**
3. Assessment Quality Assurance levels/Framework:
   - Question bank is created by the Subject Matter Experts (SME) are verified by the other SME - **The Question Bank is prepared by content development team with the support of the SMEs.**
   - Questions are mapped to the specified assessment criteria – **Yes**.
   - Assessor must be ToA certified & trainer must be ToT Certified – **Yes.**
4. Types of evidence or evidence-gathering protocol:
   - Time-stamped & geotagged reporting of the assessor from assessment location - **NA**
   - Centre photographs with signboards and scheme specific branding – **Yes**.
5. Method of verification or validation:
   - Surprise visit to the assessment location - **Yes**
6. Method for assessment documentation, archiving, and access
   - Hard copies of the documents are stored - **Yes, the documents will be in the custody of respective district offices.**

On the Job:

- Each module (which covers the job profile of Automotive Service Assistant Technician) will be assessed separately - **NA**
- The candidate must score 60% in each module to successfully complete the OJT - **NA**
- Tools of Assessment that will be used for assessing whether the candidate is having desired skills and etiquette of dealing with customers, understanding needs & requirements, assessing the customer and perform Soft Skills effectively: **Videos of Trainees during OJT**
- Assessment of each Module will ensure that the candidate is able to: **Effective engagement with the customers, Understand the working of various tools and equipment.**

Annexure 8: 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
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.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf