

## NSQF QUALIFICATION FILE

Approved in 28<sup>th</sup> NSQC meeting Date 29<sup>th</sup> March 2023

Qualification Code  
QG-04-IT-00404-2023-V1-ASAP

### CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

#### Name and address of submitting body:

**ADDITIONAL SKILL ACQUISITION PROGRAMME KERALA**  
**3<sup>rd</sup> Floor Trans towers, Vazhuthacaud P.O**  
**Thiruvananthapuram 695014**

#### Name and contact details of individual dealing with the submission

**Name: Dr. Usha Titus**

**Position in the organisation: Chairperson and Managing Director**

**Address if different from above: NA**

**Tel number(s):04712772500**

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#### List of documents submitted in support of the Qualifications File

1. Annexure 1- Affiliation of Skill Training Partners
2. Annexure 2- Model Curriculum
3. Annexure 3- Industry Validation
4. Annexure 4- Occupational Map
5. Annexure 5- Evidence of need

#### SUMMARY

<b>1</b>	<b>Qualification Title</b>	Rust Developer
<b>2</b>	<b>Qualification Code, if any</b>	NA
<b>3</b>	<b>NCO code and occupation</b>	2512.0701, 2513.0101, 2519.0100

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4	<b>Nature and purpose of the qualification (Please specify whether qualification is short term or long term)</b>	<ul style="list-style-type: none"> <li>- Short Term</li> <li>- Collaborate with engineers, management, and other relevant departments to identify end-user requirements and specifications.</li> <li>- Write code based requirements using the programming language Rust.</li> <li>- Integrate third-party software components and programs.</li> <li>- Verify and deploy programs and systems.</li> <li>- Troubleshoot, debug and update existing software.</li> </ul>
5	<b>Body/bodies which will award the qualification</b>	Additional Skill Acquisition Programme Kerala
6	<b>Body which will accredit providers to offer courses leading to the qualification</b>	Additional Skill Acquisition Programme Kerala
7	<b>Whether accreditation/affiliation norms are already in place or not, if applicable (if yes, attach a copy)</b>	Yes. Attached as Annexure 1
8	<b>Occupation(s) to which the qualification gives access</b>	<ul style="list-style-type: none"> <li>• Rust Engineer/ Rust Developer</li> <li>• Senior Rust Developer</li> <li>• Tech Lead Rust Developer</li> <li>• Engineer Rust Developer</li> <li>• Engineering Director Rust Developer</li> <li>• Principal Architect Rust Developer</li> </ul>
9	<b>Job description of the occupation</b>	<ul style="list-style-type: none"> <li>- Collaborate with engineers, management, and other relevant departments to identify end-user requirements and specifications.</li> <li>- Write code-based requirements using the programming language Rust.</li> <li>- Integrate third-party software components and programs.</li> <li>- Verify and deploy programs and systems.</li> <li>- Troubleshoot, debug and update existing software.</li> </ul>
10	<b>Licensing requirements</b>	Nil
11	<b>Statutory and Regulatory requirement of the relevant sector (documentary evidence to be provided)</b>	Nil
12	<b>Level of the qualification in the NSQF</b>	Level 4

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13	<b>Anticipated volume of training/learning required to complete the qualification</b>	390 hours
14	<b>Indicative list of training tools required to deliver this qualification</b>	<ul style="list-style-type: none"> <li>• Programming languages C/C++/Python/JavaScript</li> </ul>
15	<b>Entry requirements and/or recommendations and minimum age</b>	<ul style="list-style-type: none"> <li>• The student must have moderate to expert level knowledge of one of the following programming languages C/C++/Python/JavaScript</li> <li>• 12<sup>th</sup> Pass</li> </ul>
16	<b>Progression from the qualification (Please show Professional and academic progression)</b>	Rust Developer → Senior Rust Developer → Tech Lead Rust Developer → Engineer Rust Developer → Engineering Director Rust Developer → Principal Architect Rust Developer
17	<b>Arrangements for the Recognition of Prior learning (RPL)</b>	For Trainers in the area without formal qualification if skill gap is found, a maximum of 40 hours' skill training will be provided to candidates with a training fee decided by ASAP. Assessment will be carried out by Board of Skill Assessment assigned by Curriculum Committee, ASAP and successful candidates will be awarded certification against the prescribed job role
18	<b>International comparability :</b>	<a href="https://zerotomastery.io/courses/learn-rust/">https://zerotomastery.io/courses/learn-rust/</a> <a href="https://www.udemy.com/course/ultimate-rust-crash-course/">https://www.udemy.com/course/ultimate-rust-crash-course/</a> <a href="https://www.efinancialcareers.com/news/2022/02/rust-programming-language">https://www.efinancialcareers.com/news/2022/02/rust-programming-language</a> <a href="https://www.4cornerresources.com/job-descriptions/rust-developer/">https://www.4cornerresources.com/job-descriptions/rust-developer/</a> <a href="https://www.plexusrs.com/growth-rust-developer/">https://www.plexusrs.com/growth-rust-developer/</a>

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19	<b>Date of planned review of the qualification</b>	29 <sup>th</sup> March 2026	
20	<b>Formal structure of the qualification Mandatory components</b>		
	<b>Title of component and (learning hours) code/NOSs /Learning outcomes</b>	<b>Estimated size</b>	<b>Level identifica tion</b>
1.	Overview of Basic Programming	60hrs	4
2.	Introduction on Rust Language	60 hrs	4
3	Building Systems with RUST Language	60 hrs	4
4	PROJECT	150hrs	4
5	Employability Skills	60hrs	4
	<b>Sub Total (A)</b>	<b>390 hrs</b>	4
	<b>Optional Components</b>	NIL	
	<b>Sub Total (B)</b>	<b>0 hrs</b>	
	<b><u>Total (A+B)</u></b>	<b>390 hrs</b>	4

### SECTION 1

#### ASSESSMENT

21	<b>Body/Bodies which will carry out assessment:</b>  Additional Skill Acquisition Programme Kerala
22	<b>How will RPL assessment be managed and who will carry it out?</b> ASAP will be responsible for conduct of RPL Assessment. Assessors identified by ASAP's Board of Skill Assessment will be responsible for the conduct of the RPL assessment. RPL theory exam can be conducted at examination hall and practical exam at field. The level of difficulty of question will be more compared to trainees who attend the regular program. The weightage for skill part assessment will be more compared to that of theory part, for the candidates undergoing RPL.

**23**

**Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.**

ASAP follows an assessment framework which has got weightages for all the activities in which students get involved during the training program. The components of assessment include Attendance, Internal Assessment and student involvement, Final Assessment. Of these, attendance and internal assessment come under continuous and comprehensive evaluation (CCE). All Assessments with regard to the academic status of the student shall be done in marks and overall assessment will be done in grades. The report card/certificate will state only the overall grade.

**TABLE 1**

TYPE OF ASSESSMENT			WEIGHTAGE
CONTINUOUS & COMPREHENSIVE EVALUATION	ATTENDANCE		10%
	STUDENTS INVOLVEMENT	ASSIGNMENT	10%
		INTERNAL EXAM	10%
PRACTICAL/LABWORK/APPRENTICESHIP/HANDS ON EXPERIENCE BY THE INDUSTRY			30%
SKILL PROFICIENCY TEST BY THE INDUSTRY/ASSESSMENT AGENCY			40%
<b>TOTAL</b>			<b>100%</b>

1. **ATTENDANCE:** Many classes use lectures, discussions, demonstrations, experiments, and student participation as part of the daily learning activities and those who miss these sessions will not be able to compensate for the loss. Regular student participation in daily classroom activities plays a significant role in student’s success. For each course, the student’s attendance will be marked daily and grades will be awarded accordingly. The corresponding grade points shall be generated by a system designed for this purpose (MIS). The grade points shall be given as per the table below.

POINT SCALE	GRADE POINT
Attendance above 90%	10
86 to 90 %	8
80 to 85 %	5
Below 80% (permissible only in the event of condonation)	3

**2. INTERNAL ASSESSMENT & STUDENT INVOLVEMENT:**

a) **Assignments:** Each Student has the opportunity to complete the assignment according to his/her preferred approach. This might involve reading textbook chapters and assigned reading materials to gain a better understanding prior to completing an assignment or exploring new resources to gain additional information. There shall be no restriction on the resources that the students are allowed to consult or any limit to the number of hours he/she choose to spend on the assignment. Since each student employs his/her own personal learning style, an individual assignment may actually be a fairer measure of the students learning. There are two assignments, one after 25% coverage of the total syllabus and the

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other after 75% of the total syllabus. Each shall be evaluated and assigned a score. The scores should be marked on the student's assignment sheets by the Skill Development Executive after evaluation. The scores shall be entered in the student profile twice. The first shall be made on completion of the initial 25% of the syllabus. It will be based on the average score up to that point. The second entry shall be made on completion of 75% of the syllabus. This will be based on the grades awarded for the assignment after the first entry. The average of the two shall be the final score for assignments. Questions for the assignments will be generated from a data bank created for the same. The data bank will have questions which will test the vital portions of the syllabus covered which have a direct bearing in the skill acquisition. The SDE can Access this through One Time Password (OTP) for each batch and each assignment.

- b) Internal Exam:** there are two internal tests viz. one after completing 50% of the syllabus and the other after the end of the training course. These tests are conducted by the trainer based on the topics covered in the course. Questions are selected at random from a question bank already created. Of these for each test 50% of the questions are theoretical, in the form of objective type and the remaining 50% will be short descriptive questions oriented towards procedure/strategies/ways of doing/ ethics of doing, (Process of skill acquisition). The duration of the first test after 50% of the total session will be 1 hr and that of the second test after completion of the entire syllabus will be 3hrs. The grades shall be entered in the student's profile twice. The first entry shall be made on completion of the initial 50% of the syllabus and the second entry shall be made on completion of the rest of the syllabus. Total score for internal assessment will be the total of the average grade points secured in the internal tests and assignments.
3. **FINAL ASSESSMENT:** Final assessment will be conducted using a question bank. Questions will be randomly generated of which 40% will be meant to check trainee's professional knowledge, 50% is to check their professional skills and rest 10% for their soft skills.
4. **GENERATION OF QUESTION PAPER:** Each batch will have a unique user id and the trainer will be given access to question bank once for each category of test. They will be given access to the test only at the prescribed hour on the day of assessment. Question paper will be from the question bank at random based on the criteria specified for assessing each competency given in the session assessment evidence. Guidelines will be given to the trainers in terms of evaluation of assignments and internal tests.
5. **THE ASSESSMENT PLAN:** Outcome-based assessment to be followed in the skill courses by the Assessment Division will have the following design:
- I. Continuous and Comprehensive Skill Assessment (30% Weightage)**
- Knowledge and application tests carried out at four intervals during a skill course (20 Marks)
  - Attendance and assignments (10Marks)
- II. End Assessment – Performance-based (70% Weightage)**
- Practical test/hands on experience/Skill test in an OJT Centre/SDC – (30 Marks)
  - Skill Proficiency Test (40 Marks)
6. **REDRESSAL OF GRIEVANCES IN ASSESSMENT:** Any grievance regarding any of the assessment has to be addressed grievances cell of ASAP. based on the degree grievance ASAP head will choose any one or more of the following
- Deployment of a quality assurer for third party assessment
  - Report from the Skill Development Centre Programme Manager
  - Direct inspection by the concerned officials from ASAP Reassessment

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	The factual details will be submitted to the Chief Executive Officer whose decision will be final.
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### 24. ASSESSMENT EVIDENCE

Outcomes	Assessment Criteria for the outcomes	Total marks	Mark Allocation			Viva
			Out of	Theory	Skills	
The student is able to work on simple rust-Lang projects	Exercise that illustrate rust-Lang keywords	130	100	20	10	N/A
	Exercises to work with concepts taught			20	10	
	Implementing a simple example coding project			10	30	

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The student is confident with building rust-Lang codebases that can be delivered to production	Exercises to document and test example code	120	100	10	10	N/A
	Exercises to figure out requirements and matching capabilities of various libraries			20	10	
	Implementing an intermediate level coding project for a real life use case				50	
		250	200	80	120	0

### SECTION 2

### EVIDENCE OF LEVEL

Option B

Title/Name of qualification/component: Rust Developer			
NSQF Domain	Key Requirements of Job Role	How job role relates to the NSQF level descriptors	NSQF Level
<b>Process</b>	Rust Developers work with the Rust programming language to create software and systems. They finish a wide variety of projects, including those involving operating systems, web browsers, block chain initiatives, server software, and much more.	Work in familiar, predictable, routine, situation of clear choice.	4
<b>Professional knowledge</b>	Rust Developers have extensive experience with Rust programming language and also possess knowledge of other low-level backend programming languages such as C/C++.	Factual knowledge of field of knowledge or study.	4
<b>Professional skill</b>	Strong analytical abilities and excellent attention to detail will set a trainee apart. They have knowledge of advanced data structures and algorithms, are familiar with debugging tools and kernel	Recall and demonstrate practical skill, routine and repetitive in narrow range of application, using appropriate rule and tool, using quality concepts.	4

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	development tools such as WinDbg and have experience working with secure coding practices.		
<b>Core Skill</b>	These Developers have experience building enterprise-grade solutions for specialized platforms like Block chain and AI and have strong testing skills. Rust Programmers have good communication and collaboration skills, are able to work well under pressure, and have strong problem-solving skills.	Language to communicate written or oral, with required clarity, skill to basic arithmetic and algebraic principles, basic understanding of social political and natural environment.	4
<b>Responsibility</b>	Depending on the kind of project they're working on, Rust Programmers may be responsible for a variety of tasks. What doesn't change is their commitment to writing consistent, dependable code and creating a secure operating environment for the systems and software they develop. In order to fix problems, they will also need to be able to test, analyse, and debug both current and older versions of software.	Responsibility for own work and learning.	4

### SECTION 3 EVIDENCE OF NEED

<b>26</b>	<b>What evidence is there that the qualification is needed? What is the estimated uptake of this qualification and what is the basis of this estimate?</b>  Annexure 4
<b>27</b>	<b>Recommendation from the concerned Line Ministry of the Government/Regulatory Body. To be supported by documentary evidence.</b>  In Line
<b>28</b>	<b>What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF? Give justification for presenting a duplicate qualification?</b>  This course is not registered in NQR.

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29	<p><b>What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated? Specify the review process here.</b></p> <p>ASAP has a quality management system to monitor all its courses through regular feedback from students, Program Managers and Quality assures. Student feedback will be collected at regular intervals. Similar feedback will be collected from Program Managers who manage the courses in Skill Development Centres.</p> <p>Quality assures empanelled by ASAP are deployed to these places and based on the feedback collected from students and Program Managers on learning outcomes. Corrective actions are suggested by Quality division to Program Managers through Sector heads and Sector Program Managers to effect the required changes.</p>
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### **SECTION 4**

#### **EVIDENCE OF PROGRESSION**

30 What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?  
*Show the career map here to reflect the clear progression.*

