QUALIFICATION FILE – Micro Credentials

Introduction to AI in Logistics

☒ **Public** ☐ **Private**

☒ **Upskilling** ☐ **Dual/Flexi Qualification** ☐ **For ToT**   ☐ **For ToA**

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

NCrF/NSQF Level: 3.5

Submitted By:

Logistics Sector Skill Council

No. 480 A, 7th floor Khivraj Complex 2, Anna Salai, Nandanam, Chennai – 600 035

Submitting Body Contact Details:

Name: Ms. Reena Murray

Position in the Organization: Head - Standards & Quality Assurance

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Section 1: Basic Details

1.	**Micro Credential-Qualification Name**	Introduction to AI in Logistics	
2.	**Sector/s**	Logistics	
3.	**National Qualification Register (NQR) Code & Version** *(Will be issued after NSQC approval.)*	NM-3.5-TW-02252-2024-V1-LSC & 1.0	**4. NCrF/NSQF Level: 3.5**
5.	**Brief Description of the Micro Credential**	This program introduces various aspects of Artificial Intelligence in Logistics. This course covers the basics of Artificial Intelligence and the areas of implementation in Logistics. The micro credential focuses on inspiring students for a career in Logistics and for upskilling.	
6.	**Eligibility Criteria for Entry for Students/Trainee/Learner/Employee**	a. **Entry Qualification & Relevant Experience** 	S. No.	Academic/Skill Qualification (with specialization- if applicable)	Relevant Experience (with specialization- if applicable)
			1.	12th grade pass or equivalent	
			2.	10th grade pass and pursuing continuous schooling	
		b. **Age:** 18 years			

7.	**Credits Assigned to this Qualification, Subject to Assessment** *(as per National Credit Framework (NCrF))*	1	**8. Common Cost Norm Category (I/II/III)** *(wherever applicable)*: **I**
9.	**Any Licensing Requirements/ Pre-requisites for Undertaking Training** *(wherever applicable)*	NA	
10.	**Expected Outcomes of the Micro Credential**	**Terminal learning outcomes are:** **The student will be able to learn the basics of the below topics of AI** • Origin & Definition of AI • How Machines Learn: Three Components of AI • Trends Accelerating AI • Challenges & Risks	

		- Consumer AI - Enterprise AI - AI in Retail - Back Office AI - AI in Supply Chain and Predictive Logistics - AI-Powered Customer Experience - Autonomous Transportation - Aspects of AI in Logistics - Technologies widely integrated with AI in Logistics. - Current Impact of AI in Logistics - Future of AI in Logistics.
11.	**Training Duration by Modes of Training Delivery** *(Specify **Total Duration** as per selected training delivery modes and as per requirement of the qualification)*	☐ **Offline Only** ☐ **Online Only** ☒ **Blended** (see table below) *(Refer Blended Learning Annexure for Details)*

☐ **Offline Only** ☐ **Online Only** ☒ **Blended**

Training Delivery Mode	Theory (Hours)	Practical (Hours)	Total (Hours)
Classroom (offline)	20	8	28
Online	2		2

(Refer Blended Learning Annexure for Details)

12.	**Assessment Criteria**	(see table below)

Theory (Marks)	Practical (Marks)	Project (Marks)	Viva (Marks)	Total (Marks)	Passing %age
30	50	10	10	100	70

13.	**Is the Qualification Amenable to Persons with Disability**	☒ **Yes** ☐ **No If** *"Yes", specify applicable type of Disability: Locomotive Disability*
14.	**How participation of women will be encouraged?**	The course is gender neutral and the sector provides equal opportunities for female candidates.

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15.	Other Indian Languages in which the Micro Credential will be implemented.	Hindi	
16.	Is similar Micro Credential Qualification(s) available on NQR-if yes, justification for this qualification	☐ Yes ☒ No URLs of similar Qualifications:	
17.	Name and Contact Details Submitting / Awarding Body SPOC	**Name**: Ms. Reena Murray **Email**: reena@lsc-india.com **Contact No.**: 044 4851 4607 **Website**: www.lsc-india.com	
18.	NSQC Approval Date: 15-03-2024	19. **Validity Duration:** 3 Years	20. **Next Review Date:** 15-03-2027

Section 2: Training Related

1.	**Trainer's Qualification and experience in relevant sector (in years)** (as per requirement and NCVET guidelines)	Recommended that the Trainer is certified for the Job Role: "Trainer (VET and Skills)", mapped to the Qualification Pack: "MEP/Q2601, V2.0". Minimum accepted score is 80%
2.	**Master Trainer's Qualification and experience in relevant sector (in years)** (as per requirement and NCVET guidelines)	Certified for the micro credential: "Introduction to AI in Logistics" mapped to MCr: "LSC/MCr-0001, v1.0". Minimum accepted score is 80%
3.	**Tools and Equipment Required for Training**	☒ Yes ☐ No (If "Yes", details to be provided in Annexure)

Section 3: Assessment Related

1.	**Assessor's Qualification and experience in relevant sector (in years)** (as per requirement and NCVET guidelines)	Any degree + 2 years of industry experience (in AI)

		Recommended that the Assessor is certified for the Job Role: "Assessor (VET and Skills)", mapped to the Qualification Pack: "MEP/Q2701, V2.0". Minimum accepted score is 80%
2.	**Proctor's Qualification and experience in relevant sector (in years)** *(as per requirement and NCVET guidelines)*	Any degree + 2 years of industry experience (in AI) Certified for the micro credential: "Introduction to AI in Logistics" mapped to MCr: "LSC/MCr-0001, v1.0". Minimum accepted score is 80%
3.	**Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years)** *(as per requirement and NCVET guidelines)*	Any degree + 5 years of industry experience (in AI) + 1 year assessment experience Recommended that the Assessor is certified for the Job Role: "Lead Assessor", mapped to the Qualification Pack: "MEP/Q2601". Minimum accepted score is 80%
4.	**Assessment Mode** *(Specify the assessment mode)*	**Mode:** ☐ **Online Only** ☐ **Offline Only** ☒ **Blended**
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 4: Evidence of Need of the Micro Credential

As per the NCVET Guidelines for evidence of need, provide the required Annexure/Supporting documents.

1.	Government /Industry initiatives/ requirement (Yes/No): Yes
2.	Number of Industry validation provided: 5
3.	Estimated number of people to be trained: 20000

Section 5: Annexure Check List

Specify Annexure Number and Name.

1.	**Annexure:** NCrF/NSQF level justification based on NCrF Level/NSQF descriptors *(Mandatory)*	Annexure
2.	**Annexure:** Learning Outcomes and Assessment Criteria *(Mandatory)*	Annexure
3.	**Annexure:** Assessment Strategy *(Mandatory)*	1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. 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. 2. The assessment for the theory part will be based on knowledge bank of questions validated and approved by the LSC. 3. LSC affiliated assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below) 4. LSC affiliated assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on these criteria 5. To pass the Qualification Pack, every trainee should score a minimum of 70% for NSQF level 4 & above job roles and 50% for NSQF level 1 to 3 job roles. 6. In case of unsuccessful completion, the trainee may seek re-assessment on the Qualification Pack.
4.	**Annexure:** List of tools and equipment relevant for qualification *(Mandatory – Except in case of online course)*	Annexure
5.	**Annexure:** Blended Learning *(Mandatory in case selected mode of delivery is "Blended Learning")*	Annexure
6.	**Annexure:** Acronym and Glossary *(Optional)*	Annexure

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	The learner will be able to acquire specialized knowledge about the basics of logistics and supply chain activities.	Students will be learning the basics of Artificial intelligence, its aspects and usage in Logistics. The course providing knowledge on future skills is relevant to Level 4.	3.5
Professional and Technical Skills/ Expertise/ Professional Knowledge	Knowledge and skills in knowing how logistics operates.	Participants will attain skills to identify services and features built with AI and in-demand AI solutions for Logistics.	3.5
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	Participants will be ready for careers and develop skills in futuristic skills and Logistics.	Participants will be sensitized and inspired to choose a career in AI integrated Logistics. Thus, providing them with broader Employability Skills, including digital skills.	3.5
Broad Learning Outcomes/Core Skill	• Focus on range of application integrated with AI of standard and non-standard procedures and somewhat complex operations in production/ services. • Able to identify the problems and a wider possible range of AI solutions with pros and cons in production/ services.	Versatile candidates adept at executing specialized tasks with minimal supervision, applying technical skills and problem-solving with clarity.	3.5
Responsibility	Candidates should be able to brief about the basics of AI and Logistics.	The course enables the capability and confidence of the candidates to perform non-standard and non-routine tasks.	3.5

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Annexure: Learning Outcomes and Assessment Criteria

Detailed learning outcomes and assessment criteria for the qualification are as follows:

S. No.	Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	Basics of Artificial Intelligence				
	PC1. Origin & Definition of AI	2	4	1	1
	PC2. How Machines Learn: Three Components of AI	2	4	1	1
	PC3. Trends Accelerating AI	2	4	1	1
	PC4. Challenges & Risks	2	4		
	AI in Everyday Life				
	PC5. Consumer AI	2	4		
	PC6. Enterprise AI	2	4		
	PC7. AI in Retail	2	4		
	Artificial Intelligence in Logistics				
	PC8. Back Office AI	2	4		
	PC9. AI in Supply Chain and Predictive Logistics	2	4	1	1
	PC10. AI-Powered Customer Experience	2	4	1	1
	PC11. Autonomous Transportation	2	4	1	1
	AI Technologies and Aspects in Logistics				
	PC12. Aspects of AI in Logistics	2	4	1	1
	PC13. Technologies widely integrated with AI in Logistics	2	4	1	1
	PC14. Current Impact of AI in Logistics	2	4	1	1
	PC15. Future of AI in Logistics	2	4	1	1
	Total Marks	**30**	**50**	**10**	**10**

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Annexure: Assessment Strategy

The emphasis is on 'learning-by-doing' and practical demonstration of skills and knowledge based on the performance criteria.

Accordingly, assessment criteria for each job role is set and made available in the qualification pack. The assessment papers for both theory and practical would be developed by Subject Matter Experts (SME) hired by Logistics Sector Skill Council or with the LSC accredited Assessment Agency as per the assessment criteria mentioned in the Qualification Pack.

The assessments papers would also be checked for the various outcome-based parameters such as quality, time taken, precision, tools & equipment requirement etc.

Each Element/Performance Criteria in the NOS is assigned marks on relative importance, criticality of function and training infrastructure.

The following tools would be used for final assessment:

1. Practical Assessment: This comprises of the creation of a mock environment in the skill lab which is equipped with all equipment required for the qualification pack. Candidate's soft skills, communication, aptitude, safety consciousness, quality consciousness etc. is ascertained by observation and marked in observation checklist. The outcome is measured against the specified dimensions and standards to gauge the level of their skill achievements.

2. Viva/Structured Interview: This tool is used to assess the conceptual understanding and the behavioral aspects about the job role and the specific task at hand. It also includes questions on safety, quality, environment, and equipment etc.

3. Written Test: Question paper consisting of MCQs (Hard:25, Medium:50 and Easy: 25) with questions from each element of each NOS.

The written assessment paper is comprised of following types of questions:

i.	True / False Statements
ii.	Multiple Choice Questions
iii.	Matching Type Questions
iv.	Fill in the blank
v.	Scenario based Questions
vi.	Identification Questions

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Annexure: Tools and Equipment

List of Tools and Equipment

     Batch Size: 30

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	Computers with the latest configurations and high-speed internet	Standard	30
2	Smartphones	Standard	30

Classroom Aids:

The aids required to conduct sessions in the classroom are:

1. Whiteboard/Smart Board, Marker, Board eraser
2. Charts, Models, Video presentation

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Annexure: Industry Validations Summary

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile (if available)
1	Denken Global Supply Chain Pvt Ltd	Shyamsundar CK	Director	5, Avvaiyar St, Meenambakkam, Chennai, Tamil Nadu 600027			
2	DB Schenker India Pvt. Ltd.	Jyotsana Saxena	General Manager-P&O	No. 217, 2nd floor, Vardhman Crown Mall, Plot No. 02, L.S.C, Sector-19, Dwarka, New Delhi- 110075			
3	Sattva Hi-Tech and Conware Pvt. Ltd.	S. Padmanabhan	Director	High Gate, Level 4, 153/82, Santhome High Road, Raja Annamalaipuram, Chennai-600028			
4	Gloshipping and Logistics Pvt Ltd	R. Rajesh Kumar	MD	No. 2D - Gleneden place, No.310 (813), Poonamallee High Road, Kilpauk, Chennai - 600017			
5	Ahmedabad Roadlines Pvt Ltd	Nitish Baweja	Director - Operations	Plot no 184, Transport Nagar, Sector 58, Faridabad, Haryana - 121004			

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Annexure: Training Details

Training Projections:

Year	Estimated Training # of Total Candidates	Estimated training # of Women	Estimated training # of People with Disability
2025	6000	3000	800
2026	6000	3000	800
2027	8000	4000	1200

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

Annexure: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools:

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	Books/ e-books, Presentations, Reference Material	90:10
2	☒ Imparting Soft Skills, Life Skills and Employability Skills /Mentorship to Learners	Self-Learning Videos, Mobile Learning	90:10
3	☒ Showing Practical Demonstrations to the learners	Self-Learning Videos	90:10
4	☒ Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training	Self-Learning Videos	90:10
5	☒ Tutorials/ Assignments/ Drill/ Practice	Online Question Bank, Mobile Quick test app, MCQ based tests	90:10
6	☒ Proctored Monitoring/ Assessment/ Evaluation/ Examinations	Mock test sessions	90:10
7	☒ On the Job Training (OJT)/ Project Work Internship	Proctored Online tests, Offline assessments	90:10

Annexure: 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
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

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