QUALIFICATION FILE

AI Development Associate

☒ **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: 4

Submitted By:

National Institute of Electronics and Information Technology (NIELIT)

NIELIT Bhawan,
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Section 1: Basic Details

1.	**Qualification Name**	**AI Development Associate**	
2.	**Sector/s**	**IT-ITeS**	
3.	**Type of Qualification: ☒ New ☐ Revised ☐ Has Electives/Options ☐OEM**	**NQR Code & version of existing/previous qualification: NA**	**Qualification Name of existing/previous version: NA**
4.	**a. OEM Name** **b. Qualification Name** (*Wherever applicable*)	**-**	
5.	**National Qualification Register (NQR) Code &Version** (*Will be issued after NSQC approval*)	QG-04-IT-00141-2023-V1-NIELIT	**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**	**Nature:** The programme encompasses people's skills, trust, and ability to use technologies responsibly and effectively for broader socio-economic benefits. It has been developed in collaboration with INTEL Technologies India Pvt. Ltd., aiming at Empowering the future workforce with necessary Artificial Intelligence skills for employability in the digital economy. **Purpose:** ● Gain AI technical confidence: Demystify AI and equip the future workforce with the confidence to learn and apply AI skills independently. ● Enhance employability for AI-related jobs: Build necessary technology, career growth and social skills on AI for jobs ahead. Produce evidence for employment: Demonstrate solutions through AI projects capturing industrial or Social impact.	

9.	Eligibility Criteria for Entry for Student/Trainee/Learner/Employee	a. **Entry Qualification & Relevant Experience:**

a. **Entry Qualification & Relevant Experience:**

S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Relevant Experience (with Specialization - if applicable)
1	Pursuing 1st year of UG in any discipline	**NA**
2	12th Grade Pass	**NA**
3	Completed 2nd year of the 3-year diploma in CS/IT/EC/EE/ allied after 10th	**NA**
4	12th Grade Pass who have undergone ARTIFICIAL INTELLIGENCE course as Vocational subjects in class 12th^	**NA**
5	Previous relevant Qualification of NSQF Level 3.0 with minimum education as 10th Grade pass	**3 Years**

^ Such students shall be exempted from the first 2 NOSs.

    i. Implementation of Basic AI Solution using Python programming language and SMART Framework.

    ii. Solving use cases using AI models along with building up Entrepreneurial Mindset

b. **Age: No Bar**

10.	Credits Assigned to this Qualification, Subject to Assessment *(as per National Credit Framework (NCrF))*	19 Credits	**11. Common Cost Norm Category (I/II/III)** *(wherever applicable)***: Category-II** (Information and Communication technology)
12.	Any Licensing requirements for Undertaking Training on This Qualification *(wherever applicable)*	NA	

13.	**Training Duration by Modes of Training Delivery** *(Specify **Total Duration** as per selected training delivery modes and as per requirement of the qualification)*	☒**Offline** ☐**Online** ☐**Blended**						
		Training Delivery Modes	**Theory (Hours)**	**Practical (Hours)**	**OJT $ Mandatory (Hours)**	**ES(Hours)**	**Total (Hours)**
		Classroom/ Online/ Blended	120	150	240	60	570
		$ The virtual simulated environment shall be provided for the training; the candidates can also go for the internship/ OJT. The mode of delivery shall be based on the regional demand and can be offered in any of the above modes mentioned. (Refer Blended Learning Annexure-V for details)						
14.	**Aligned to NCO/ISCO Code/s** *(if no code is available mention the same)*	NCO-2015/2511.0106: Support Engineer						
15.	**Progression path after attaining the qualification** *(Please show Professional and Academic progression)*	**Academic:** **Horizontal:** Level 4 Course in AI: AI & ML – Jr. Telecom Data Analyst **Vertical:** Level 5 Courses in AI: AI -Machine learning Developer, Machine Learning (ML) Engineer -> Level 6 Courses in AI: AI - Business Intelligence Analyst, AI - Database Administrator, AI – Data Quality Analyst, AI – DevOps Engineer **Professional:** AI Engineer-> Machine Learning Engineer -> Business Intelligence Developer -> AI Research Scientists						
16.	**Other Indian languages in which the Qualification & Model Curriculum are being submitted**	Qualification files available in English & Hindi Languages.						
17.	**Is similar Qualification(s) available on NQR-if**	☐ Yes ☒ No						

	yes, justification for this qualification	
18.	**Is the Job Role Amenable to Persons with Disability**	☒ **Yes**　☐ **No** 　a. Locomotor Disability 　　i. Leprosy-Cured Person 　　ii. Dwarfism 　　iii. Muscular Dystrophy 　　iv. Acid Attack Victims 　b. Visual Impairment 　　i. Low Vision
19.	**How Participation of Women will be Encouraged**	Participation of Women Candidates will be ensured as per Existing government norms. Time to time exclusive batches for women would be run for the proposed course. funding of women batches from IT for masses scheme /other schemes launched by Govt. from time to time
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 of Submitting / Awarding Body SPOC** (*In case of CS or MS, provide details of both Lead AB & Supporting ABs*)	**From NIELIT:** **Name: Mrs Anita Budhiraja, Joint Director (Technical)** Email: a.budhiraja@nielit.gov.in Contact No: 01881-257062 Website: https://www.nielit.gov.in From INTEL: Name: Shweta Khurana Email: shweta.khurana@intel.com Contact No: 9560898059
23.	**Final Approval Date by NSQC: 31.01.2023**	**24. Validity Duration: 03 Years**　　**25. Next Review Date: 31.01.2026**

Section 2: Module Summary

Mandatory NOS/s of Qualifications
i. Implementation of Basic AI Solution using Python programming language and SMART Framework.
ii. Solving use cases using AI models along with building up Entrepreneurial Mindset
iii. Realization of Projects in AI domains with an understanding of AI Project Pitfalls
iv. Solving Real-time industrial problem statements using AI
v. Employability Skills

***Th.**-Theory*   ***Pr.**-Practical OJT-On the Job **Man.**-Mandatory*   *Training Rec.-Recommended*   ***Proj.**-Project*

S. No	NOS/Module Name	Core/Non-Core	NOS/Module Code & Version (if applicable)	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks				Weightage(%) *(if applicable)*
						Th.	Pr.	OJT	ES	Total	Th.	Pr.	Proj.	Total	
1.	NOS1: Implementation of Basic AI Solution using Python programming language and SMART Framework.	Core	NIE/ITS/N14021	4	1	15	15	-	-	**30**	30	9	-	**39**	11.1
2.	NOS2: Solving use cases using AI models along with building up Entrepreneurial Mindset	Core	NIE/ITS/N14022	4	2	25	35	-	-	**60**	50	21	-	**71**	20.2
3.	NOS3: Realization of Projects in AI domains with an understanding of AI Project Pitfalls	Core	NIE/ITS/N14023	4	5	70	80	-	-	**150**	100	48	-	**148**	42.2
4.	NOS4: Solving Real-time industrial problem statements using AI	Core	NIE/ITS/N14024	4	1	10	20	-	-	**30**	20	12	-	**32**	9.1
5.	NOS 5: Employability Skills	Core	DGT/VSQ/N0102	4	2	-	-	-	60	**60**	-	-	-	**30**	8.6
6.	Implementation of AI project in virtual environment/ OJT	Core	N/A	4	8	0	0	240	0	**240**	0	0	30	**30**	8.6
	Total			**4**	**19**	**120**	**150**	**240**	**60**	**570**	**200**	**90**	**30**	**350**	**100**

Assessment Components	NOS Included	Duration** (in mins)	Marks
Theory 1: AI Application Associate Paper-1	NOS 1, NOS 2, NOS 4	90	100
Theory 2: AI Application Associate Paper-2	NOS 3	90	100
Practical	NOS 1, NOS 2, NOS 3, NOS 4	180	90
Internal Assessment	Employability Skills	-	30
Project	Implementation of AI project in virtual environment/ OJT	-	30
		Total	**350**

**Assessment strategy shall be as per NIELIT Norms prevailing at times.

Minimum Pass Percentage – The pass percentage is 50% in each assessment component (as mentioned in the above table) with the aggregate pass percentage be 50%

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/ Electrical Engineering/ Electronics and Communication/ allied branches Or MCA Or BCA Or Attained NSQF Level-5 in AI Domain Or NIELIT A-Level Qualified
2.	**Master Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	B. Tech in Computer Science/ Electrical Engineering/ Electronics and Communication/ allied branches 2 Years of Experience in teaching Or MCA 2 Years of Experience in teaching Or BCA with 4 Years of Experience in teaching

3.	**Tools and Equipment Required for Training**	☒Yes ☐No *Details available in Annexure-II*
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)*	B. Tech in Computer Science/ Electrical Engineering/ Electronics and Communication/ allied branches 2 Years of Experience in teaching Or MCA 2 Years of Experience in teaching Or BCA with 4 Years of Experience in teaching
2.	**Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	The assessor carries out theory online assessments through the remote proctoring methodology. Theory examination would be conducted online and the paper comprise of MCQ. Conduct of assessment is through trained proctors. Once the test begins, remote proctors have full access to the candidate's video feeds and computer screens. Proctors authenticate the candidate based on registration details, pre-test image captured and Icard in possession of the candidate. Proctors can chat with candidates or give warnings to candidates. Proctors can also take screenshots, terminate a specific user's test session, or re-authenticate candidates based on video feeds.
3.	**Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	An External Examiner/ Observer (Subject matter expert) are deployed including NIELIT scientific officers who are subject expert for evaluation of Practical examination/ internal assessment / Project/ Presentation/ assignment and Major Project (if applicable). Qualification is generally B.Tech
4.	**Assessment Mode** *(Specify the assessment mode)*	Online for Theory. Online/ Offline/ Blended for other assessment components depending on the region where the assessment is conducted
5.	**Tools and Equipment Required for Assessment**	☒ Same as for training ☒ Yes ☐ No

Section 5: Evidence of the need for the Qualification

1.	**Latest Skill Gap Study (not older than 2 years) (Yes/No):** Yes, Available in Annexure-C: Evidence of Need	
2.	**Latest Market Research Reports or any other source (not older than 2 years) (Yes/No):** Yes, Available in Annexure-C: Evidence of Need	
3.	**Government /Industry initiatives/ requirement (Yes/No):** Yes, Available in Annexure-C: Evidence of Need	
4.	**Number of Industry validation provided:** 5	
5.	**Estimated nos. of persons to be trained and employed:** 1000 persons per year shall be trained.	
6.	**Evidence of Concurrence/Consultation with Line Ministry/State Departments: No.** NIELIT is recognized as AB and AA under Government Category. NIELIT is an HRD arm of MeitY, therefore, the Line Ministry Concurrence is not required.	

Section 6: Annexure & Supporting Documents Check List

1.	**Annexure:** NCrF/NSQF level justification based on NCrF level/NSQF descriptors *(Mandatory)*	Available at Annexure-I: Evidence of Level
2.	**Annexure:** List of tools and equipment relevant for qualification *(Mandatory, except in case of online course)*	Available at Annexure-II: Tools and Equipment
3.	**Annexure:** Detailed Assessment Criteria *(Mandatory)*	Available at Annexure-VI: Detailed Assessment Criteria
4.	**Annexure:** Assessment Strategy *(Mandatory)*	Available at Annexure-VII: Detailed Assessment Strategy
5.	**Annexure:** Blended Learning *(Mandatory, in case selected Mode of delivery is "Blended Learning")*	Available at Annexure-V: Blended Learning
6.	**Annexure:** Multiple Entry-Exit Details *(Mandatory, in case qualification has multiple Entry-Exit)*	NA
7.	**Annexure:** Acronym and Glossary *(Optional)*	Available at Annexure-VIII: Acronym and Glossary
8.	**Supporting Document:** Model Curriculum *(Mandatory – Public view)*	Available at Annexure-A: a. Model Curriculum Available at Annexure-B: b. Curriculum
9.	**Supporting Document:** Career Progression (Mandatory - Public view)	Available at Annexure-VIII: Career Progression
10.	**Supporting Document:** Occupational Map (Mandatory)	Available at Annexure-IX: Occupational Map
11.	**Supporting Document:** Assessment SOP (Mandatory)	Available at Annexure-D: Examination SoP
12.	**Any other document you wish to submit:**	NA

Annexure I: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/Process	1. Identify and explain the six main stages of AI project 2. Create a machine learning model for 6 industry relevant applications using Orange Data Mining Tool 3. Students are able to define and qualify AI models. 4. Students are able to explain what AI Project Pitfalls in relation to the AI project cycle 5. Students are able to think critically and to apply the concept of ethics in determining best practices.	1. Possesses specialized operational knowledge and understanding of the work. 2. Have complete knowledge of the concept of time required for delivery; and Quality for a range of issues	4
Professional and Technical Skills/ Expertise/ Professional Knowledge	1. Choose an adequate focus area when evaluating a problem. 2. Qualify data from multiple sources. 3. Evaluate data for attributes. 4. Evaluate their results against bias and variance.	1. Possesses specialized professional and technical skills; displays clarity of professional knowledge and technical skills in a broad range of activities/ tasks. 2. Have knowledge of collecting and interpreting the available information, drawing conclusions & communicating the same	4
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	1. Introduction to Employability Skills 2. Career Development & Goal Setting 3. Becoming a Professional in the 21st Century 4. Constitutional values - Citizenship 5. Basic English Skills 6.Communication Skills 7. Essential Digital Skills 8. Financial and Legal Literacy 9. Customer Service 10. Entrepreneurship 11. Diversity & Inclusion 12. Getting Ready for Apprenticeship & Jobs	1. Can explain Entrepreneurial Mindset and describe the importance of it in the context of opportunity curation for future jobs 2. Can comfortably use most of the basic software with proficiency 3. Have the ability to relate to the 5 pillars of Social Emotional Skills and describe the similarities between SES and Emotional Intelligence	4

Broad Learning Outcomes/Core Skill	1. Describe AI domains like Computer Vision, Statistical Data, Natural Language Processing and current applications of the technology 2. Apply AI models to solve various industry applications using Python.	1. Students are able to use, create, and design AI solutions 2.Have knowledge of AI Project Cycle and apply the understanding of AI Project Pitfalls in improving solution	4
Responsibility	1. Implementation of Basic AI Solution 2. Solving use cases using AI models 3. Realization of Projects in AI domains	1. Takes complete responsibility for delivery and quality of own work and output as also the subordinates. 2. Shares responsibility for the group tasks.	4

Annexure II: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment
Batch Size: 30

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	Classroom	1 (30 Sq.m)	30
2	Student Chair	30	30
3	Student Table	30	30
4	Desktop computer with accessories	Installed with: NumPy Pandas Matplotlib Seaborn Scikit-Learn SciPy Scrapy Selenium PyTorch OpenCV Pyrealsense2 Intel bigdl-nano OpenVINO TensorFlow Keras Plotly	30

		Tabulate RSA QtPy, NLTK iPython Imbalanced-learn Graphviz, h5py Gensim, Beautiful soup	
5	Desk jet printer	1 Nos.	A4

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. LCD Projector
2. Pin-up Board
3. White Board

Annexure III: Industry Validations Summary

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID
1	Nirmal Hridya Educational Society	Sarita Manuja	Chairperson	Nirmal Hriday Educational Society, HM 41, Phase II, Mohali, Punjab, India 160055	9988150008	smanuja@nhes.in
2	Karmdeep Foundation	Maulik Rathod	Trustee	8th Floor Survey / E-8, Revati Tower, Karmjyot Co-op Housing Society, Ahmedabad, Gujarat - 380015	9898322203	info@karmdeepfoundation.org
3	JAYSO FOUNDATION	Mayur Dhagiya	Director	162, SAMATVA BUNGLOWS, SEC-A AT-SHELLA, TASANAND AHMEDABAD GJ 380058 IN	9722504243	info@jaysofoundation.org
4	Zen Exim Pvt. Ltd	Arun Rajput	Head - Services & Delivery	Zen Exim Pvt. Ltd, 2nd Floor, Shakti 404, Opp. New Gurudwara, S.G. Highway, Ahmedabad -380054, Gujarat	6283558226	chandigarh@zengroup.co.in
5	Fore Solutions Pvt Limited	Manu Mehta	Director	Fore Solutions (P) Limited SCO: 365, Sector 35B Chandigarh – 160 022	9216510306	manu@foresolutions.net

Annexure IV: 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
2023	1000	100	200	100	10	2
2024	1000	100	200	100	10	2
2025	1000	100	200	100	10	2

Data to be provided year-wise for next 3 years

Annexure V: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools:

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	Online interaction platforms like JitSi Meet, Bharat,BBB,VC, Google Meet, MS Teams, etc.	60:40
2	Imparting Soft Skills, Life Skills and Employability Skills /Mentorship to Learners	Online interaction platforms like JitSi Meet, Bharat VC, Google Meet, MS Teams, etc.	60:40
3	Showing Practical Demonstrations to the learners	Online interaction platforms like JitSi Meet, Bharat VC, Google Meet, MS Teams, etc.	60:40
4	Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training	NA	100:0
5	Tutorials/ Assignments/ Drill/ Practice	Online interaction platforms like JitSi Meet, Bharat VC, Google Meet, MS Teams, etc.	50:50
6	Proctored Monitoring/ Assessment/ Evaluation/ Examinations	NIELIT Remote Proctored Software	Online: 100% Theory Offline:100% Practical
7	On the Job Training (OJT)/ Project Work Internship/ Candidate Training	Simulated Platform	Either 100% online on virtual environment Or 100% offline in

					the Industry.

Annexure VI: 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 & Viva Marks Marks
Implementation of Basic AI Solution using Python programming language and SMART Framework.	1. Examples of how AI is being used in the world. 2. Differentiate AI applications from non-AI applications. 3. Identify SMART components and tell what each acronym means. 4. Identify and explain the six main stages of AI project 5. Create a machine learning model for 6 industry-relevant applications using Orange Data Mining Tool 6. Recognize basic Python syntax 7. Create data visualization using the tools inside Tableau Public	30	9	0

Solving use cases using AI models along with building up Entrepreneurial Mindset	1. Recognize Python libraries and distinguish the differences between NumPy, pandas, matplotlib and scikit-learn 2. Use AI models to solve various industry applications using Python. 3. Demonstrate the role Design Thinking and AI bias play in AI project building through a guided case study and exercise 4. Explain a System as being interconnected components and that individual elements do not demonstrate the whole until it is all put together. 5. Explain Entrepreneurial Mindset and describe the importance of it in the context of opportunity curation for future jobs	50	21	0
Realization of Projects in AI domains with an understanding of AI Project Pitfalls	1. Describe the differences between Supervised, unsupervised, and reinforcement learning 2. Describe Computer Vision, Statistical Data, Natural Language Processing and current applications of the technology 3. Relate to the 5 pillars of Social Emotional Skills and describe the similarities between SES and Emotional Intelligence 4. Think critically and apply the concept of ethics in determining best practices. 5. Explain what AI Project Pitfalls in relation to the AI project cycle 6. Use IoT in improving customer satisfaction for the automated smart retail shop. 7. Use, create, and design applications based on the capability of depth camera 8. Implement Intel's oneAPI library and discuss several examples of the usefulness of oneAPI.	100	48	0

Solving Real-time industrial problem statements using AI	1. Choose an adequate focus area when evaluating a problem. 2. Qualify data from multiple sources. 3. Evaluate data for attributes. 4. Evaluate results against bias and variance. 5. Define and qualify AI models.	20	12	0
Employability Skills	Explanation of the following: 1. Need for employability skills 2. Various constitutional and personal values. 3. Different environmentally sustainable practices and their importance 4. 21st-century skills and their importance 5. How to use the basic spoken English language 6. Do's and don'ts of effective communication 7. Inclusivity and its importance 8. Different types of disabilities and appropriate communication and behaviour towards PwD 9. Different types of financial products and services 10. How to compute income and expenses 11. Importance of maintaining safety and security in financial transactions 12. Different legal rights and laws 13. How to operate digital devices and applications safely and securely 14. Ways to identify business opportunities 15. Types of customers and their needs	30		

	16. How to apply for a job and prepare for an interview	
	17. Apprenticeship scheme and the process of registering on apprenticeship portal	
OJT	Demonstrate solutions through AI projects capturing industrial or Social impact.	30
	Total	**350**

Annexure VII: Assessment Strategy

Assessment of the qualification evaluates candidates to ascertain that they can integrate knowledge, skills and values for carrying out relevant tasks as per the defined learning outcomes and assessment criteria.

The underlying principle of assessment is fairness and transparency. The evidence of the outcomes and assessment criteria. Competence acquired by the candidate can be obtained by conducting Theory (Online), Practical assessment, internal assessment, Project/Presentation/ Assignment, Major Project. The emphasis is on the practical demonstration of skills & knowledge gained by the candidate through the training. Each OUTCOME is assessed & marked separately. A candidate is required to pass all OUTCOMES individually based on the passing criteria.

About Examination Pattern:

1. The question papers for the theory and practical exams are set by the Examination wing (assessor) of NIELIT HQS.

2. The assessor assigns roll number.

3. The assessor carries out theory online assessments through remote proctoring methodology. Theory examination would be conducted online and the paper comprise of MCQ. Conduct of assessment are through trained proctors. Once the test begins, remote proctors have full access to candidate's video feeds and computer screens. Proctors authenticate the candidate based on registration details, pre-test image captured and I- card in possession of the candidate. Proctors can chat with candidates or give warnings to candidates. Proctors can also take screenshots, terminate a specific user's test session, or re-authenticate candidates based on video feeds.

4. An External Examiner/ Observer may be deployed including NIELIT officials for evaluation of Practical examination/ internal assessment / Project/ Presentation/. Major Project (if applicable) would be evaluated preferably by external/ subject expert including NIELIT officials.

5. Pass percentage would be 50% marks in each component.

6. Candidates may apply for re-examination within the validity of registration (only in the assessment component in which the candidate failed).

7. For re-examination prescribed examination fee is required to be paid by the candidate only for the assessment component in which the candidate wants to reappear.

8. There would be no exemption for any paper/module for candidates having similar qualifications or skills.

9. The examination will be conducted in English language only.

Quality assurance activities: A pool of questions is created by a subject matter expert and moderated by other SME. Test rules are set beforehand. Random set of questions which are according to syllabus appears which may differ from candidate to candidate. Confidentiality and impartiality are maintained during all the examination and evaluation processes.

Annexure-VIII: Career Progression:

Academic:

Horizontal:

Level 4 Course in AI:

AI & ML – Jr. Telecom Data Analyst

Vertical:

Level 5 Courses in AI:

AI –Machine learning Developer
Machine Learning (ML) Engineer ->

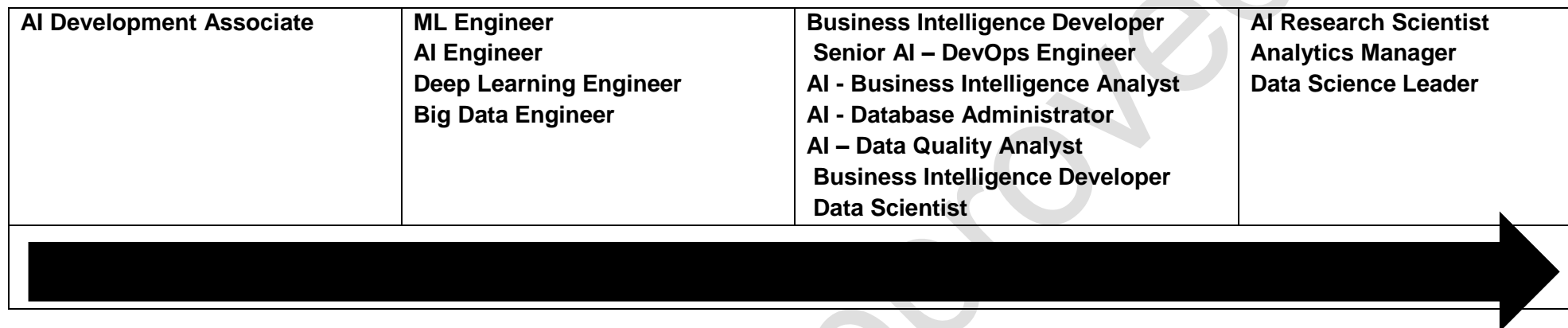Level 6 Courses in AI:

AI - Business Intelligence
Analyst AI - Database Administrator
AI – Data Quality Analyst
AI – DevOps Engineer

Professional:

AI Engineer-> Machine Learning Engineer -> Business Intelligence Developer -> AI Research Scientists

Annexure-IX: Occupational Map

AI Development Associate	ML Engineer AI Engineer Deep Learning Engineer Big Data Engineer	Business Intelligence Developer Senior AI – DevOps Engineer AI - Business Intelligence Analyst AI - Database Administrator AI – Data Quality Analyst Business Intelligence Developer Data Scientist	AI Research Scientist Analytics Manager Data Science Leader

Annexure X: 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
S.M.A.R.T	Specific Measurable Achievable Relevant Time-bound

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