



## QUALIFICATION FILE

### AI-Machine Learning Developer

- 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

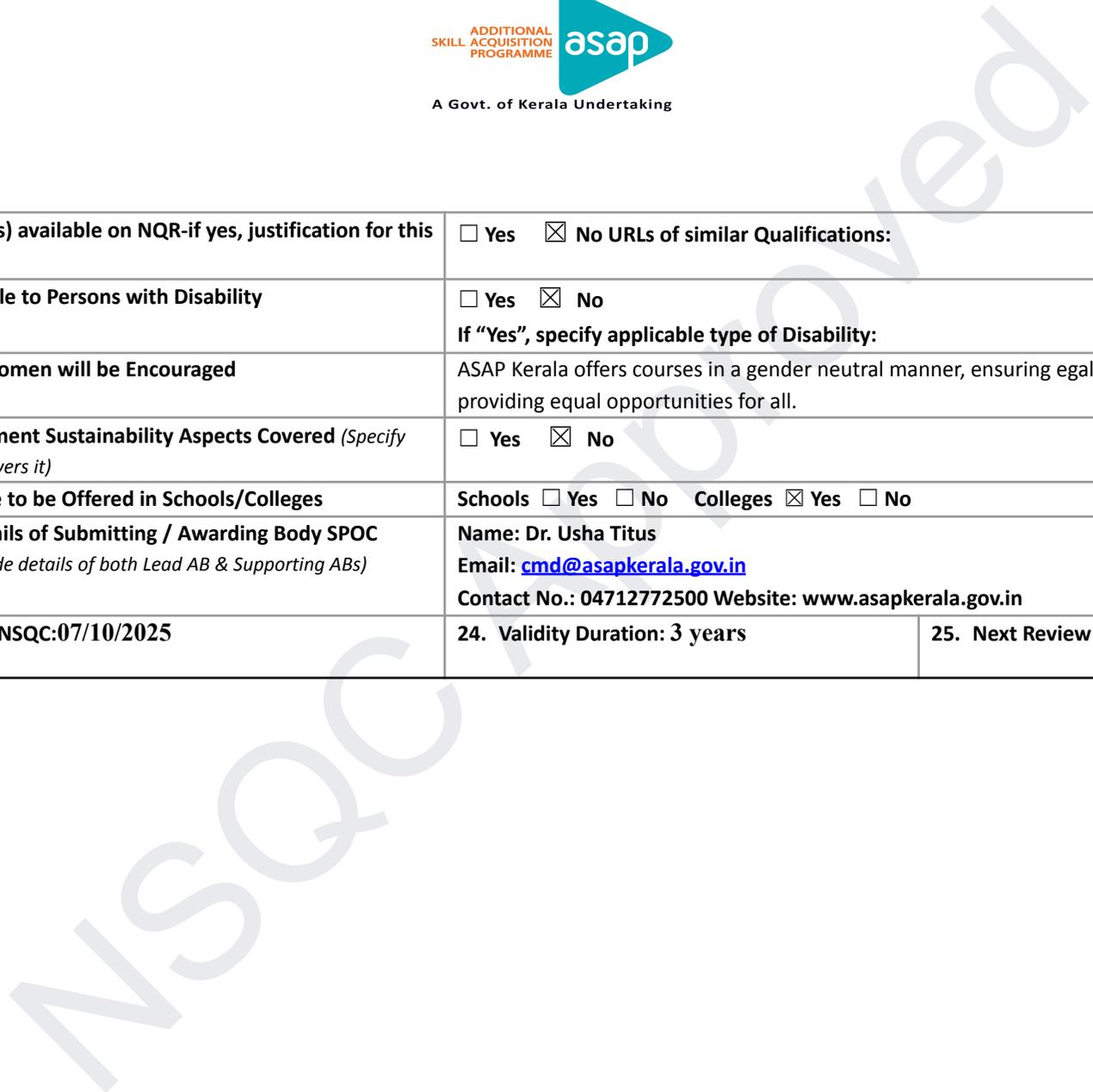
1.	<b>Qualification Name</b>	AI-Machine Learning Developer													
2.	<b>Sector/s</b>	IT-ITeS													
3.	<b>Type of Qualification:</b> <input type="checkbox"/> New <input checked="" type="checkbox"/> Revised <input type="checkbox"/> Has Electives/ <b>Options</b> <input type="checkbox"/> OEM	<b>NQR Code &amp; version of existing/previous qualification:</b> <i>(change to previous, once approved)</i>  2022/ITES/ASAP/06361 Version 1.0	<b>Qualification Name of existing/previous version:</b>  AI-Machine learning Developer												
4.	<b>a. OEM Name</b> <b>b. Qualification Name</b> <i>(Wherever applicable)</i>	NA													
5.	<b>National Qualification Register (NQR) Code &amp;Version</b> <i>(Will be issued after NSQC approval)</i>		<b>6. NCrf/NSQF Level: 5</b>												
7.	<b>Award (Certificate/Diploma/Advance Diploma/ Any Other)</b> <i>(Wherever applicable specify multiple entry/exits also &amp; provide details in annexure)</i>	Certificate													
8.	<b>Brief Description of the Qualification</b>	Individuals in this role are responsible for designing, developing, and deploying AI and Machine Learning applications and platforms. They evaluate the performance of algorithmic models within the deployment environment and ensure optimal system integration. Their responsibilities include building, testing, and implementing end-to-end AI solutions tailored to specific use cases.													
9.	<b>Eligibility Criteria for Entry for Student/Trainee/Learner/Employee</b>	<b>a. Entry Qualification &amp; Relevant Experience:</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">S. No.</th> <th style="width: 60%;">Academic/Skill Qualification (with Specialization - if applicable)</th> <th style="width: 30%;">Required Experience (with Specialization - if applicable)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Completed UG Diploma*</td> <td>No Experience required</td> </tr> <tr> <td>2</td> <td>Completed 3-year diploma*after 10th</td> <td>1.5 year relevant experience</td> </tr> <tr> <td>3</td> <td>12th or equivalent</td> <td>3 year relevant experience</td> </tr> </tbody> </table>		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1	Completed UG Diploma*	No Experience required	2	Completed 3-year diploma*after 10th	1.5 year relevant experience	3	12th or equivalent	3 year relevant experience
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2	Completed 3-year diploma*after 10th	1.5 year relevant experience													
3	12th or equivalent	3 year relevant experience													



		<table border="1"> <tr> <td>4</td> <td>Previous relevant Qualification of NSQF Level 4.5</td> <td>1.5 year relevant experience</td> </tr> <tr> <td>5</td> <td>Previous relevant Qualification of NSQF Level 4</td> <td>3 year relevant experience</td> </tr> </table> <p>b. <b>Age: NA</b>                  *CS/IT/EC and related Engineering branches                  **Relevant experiences in Data science, AI, ML, Data Analytics, related IT job roles</p>	4	Previous relevant Qualification of NSQF Level 4.5	1.5 year relevant experience	5	Previous relevant Qualification of NSQF Level 4	3 year relevant experience								
4	Previous relevant Qualification of NSQF Level 4.5	1.5 year relevant experience														
5	Previous relevant Qualification of NSQF Level 4	3 year relevant experience														
10.	<b>Credits Assigned to this Qualification, Subject to Assessment</b> (as per National Credit Framework (NCrF))	18	<b>11. Common Cost Norm Category (I/II/III)</b> (wherever applicable): II													
12.	<b>Any Licensing requirements for Undertaking Training on This Qualification</b> (wherever applicable)	NA														
13.	<b>Training Duration by Modes of Training Delivery</b> (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)	<input checked="" type="checkbox"/> Offline <input checked="" type="checkbox"/> Online <input type="checkbox"/> Blended														
		<table border="1"> <thead> <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> </thead> <tbody> <tr> <td>Classroom (offline) or online</td> <td>140</td> <td>220</td> <td>180</td> <td></td> <td>540</td> </tr> </tbody> </table>			Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)	Classroom (offline) or online	140	220	180		540
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Classroom (offline) or online	140	220	180		540											
		(Refer Blended Learning Annexure for details)														
14.	<b>Aligned to NCO/ISCO Code/s</b> (if no code is available mention the same)	2512.0800 Programmer, Engineering and Scientific/System Programmer														
15.	<b>Progression path after attaining the qualification</b> (Please show Professional and Academic progression)	AIML Engineer Trainee<AIML Engineer< Developer<Head of AIML Division<Data Engineer< Data Scientist														
16.	<b>Other Indian languages in which the Qualification &amp; Model Curriculum are being submitted</b>	Hindi														



17.	Is similar Qualification(s) available on NQR-if yes, justification for this qualification	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No URLs of similar Qualifications:	
18.	Is the Job Role Amenable to Persons with Disability	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes", specify applicable type of Disability:	
19.	How Participation of Women will be Encouraged	ASAP Kerala offers courses in a gender neutral manner, ensuring egalitarian mobilization of students and providing equal opportunities for all.	
20.	Are Greening/ Environment Sustainability Aspects Covered (Specify the NOS/Module which covers it)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
21.	Is Qualification Suitable to be Offered in Schools/Colleges	Schools <input type="checkbox"/> Yes <input type="checkbox"/> No Colleges <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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)	Name: Dr. Usha Titus Email: <a href="mailto:cmd@asapkerala.gov.in">cmd@asapkerala.gov.in</a> Contact No.: 04712772500 Website: <a href="http://www.asapkerala.gov.in">www.asapkerala.gov.in</a>	
23.	Final Approval Date by NSQC:07/10/2025	24. Validity Duration: 3 years	25. Next Review Date: 07/10/2028





## 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 <i>(if applicable)</i>	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 (%) <i>(if applicable)</i>
1.	Python Programming with Scientific and Mathematical Applications	ASP/ITS/N0107 Version.1	Core	5	3	30	60	-	-	90	7	7	-	6	20	20
2.	Core Concepts in Machine Learning	ASP/ITS/N0105 Version.1	Core	5	3	30	60	-	-	90	7	7	-	6	20	20
3.	Bayesian Methods and Text Mining	ASP/ITS/N0103 Version.1	Core	5	1	10	20	-	-	30	7	7	-	6	20	15
4.	Deep Learning Foundations to Prompt Engineering	ASP/ITS/N0106 Version.1	Core	5	3	30	60	-	-	90	7	7	-	6	20	20
5.	AI in the Cloud: Deployment, Ethics & Intelligent Agents	ASP/ITS/N0108 Version.1	Core	5	1	10	20	-	-	30	7	7	-	6	20	20
6.	On the Job Training for AI ML Developer	ASP/ITS/N0109 Version.1	Core	5	6	-	-	180		180	-	-	170	10	180	5



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)
7.	Employability Skills	DGT/VSQ/N0101 Version.1	Non-Core	2	1	30	-	-	-	30	20	30	-	-	50	-
<b>Duration (in Hours) / Total Marks</b>					18	140	220	180		540	55	65	170	40	330	100

## 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.)

## Section 3: Training Related

1.	<b>Trainer's Qualification and experience in the relevant sector (in years)</b> (as per NCVET guidelines)	Bachelor's Degree in Engineering* with at least 3 years of Industry experience and 1 year training experience*. *CS/IT and Related Branches
2.	<b>Master Trainer's Qualification and experience in the relevant sector (in years)</b> (as per NCVET guidelines)	Bachelor's Degree in Engineering* with at least 5 years of Industry experience. *CS/IT and Related Branches
3.	<b>Tools and Equipment Required for Training</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (If "Yes", details to be provided in Annexure)
4.	<b>In Case of Revised Qualification, Details of Any Upskilling Required for Trainer</b>	Nil



### Section 4: Assessment Related

1.	<b>Assessor’s Qualification and experience in relevant sector (in years) (as per NCVET guidelines)</b>	Bachelor’s Degree in Engineering* with at least 3 years of Industry experience and 2 years training experience.  *CS/IT and Related Branches
2.	<b>Proctor’s Qualification and experience in relevant sector (in years) (as per NCVET guidelines)</b>	Bachelor’s Degree in Engineering* with at least 3 years of Industry experience.  *CS/IT and Related Branches
3.	<b>Lead Assessor’s/Proctor’s Qualification and experience in relevant sector (in years) (as per NCVET guidelines)</b>	Bachelor’s Degree in Engineering* with at least 5 years of Industry experience.  *CS/IT and Related Branches
4.	<b>Assessment Mode (Specify the assessment mode)</b>	Online / Offline
5.	<b>Tools and Equipment Required for Assessment</b>	<input checked="" type="checkbox"/> Same as for training <input type="checkbox"/> Yes <input type="checkbox"/> 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.	<b>Latest Skill Gap Study (not older than 2 years) (Yes/No):</b> Yes
2.	<b>Latest Market Research Reports or any other source (not older than 2 years) (Yes/No):</b> Yes
3.	<b>Government /Industry initiatives/ requirement (Yes/No):</b> Yes
4.	<b>Number of Industry validation provided:</b> 17



5.	<b>Estimated nos. of persons to be trained and employed:</b> 600
6.	<b>Evidence of Concurrence/Consultation with Line Ministry/State Departments:</b> Yes If "No", why:

### Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	<b>Annexure:</b> NCrf/NSQF level justification based on NCrf level/NSQF descriptors (Mandatory)	Annexure 1
2.	<b>Annexure:</b> List of tools and equipment relevant for qualification (Mandatory, except in case of online course)	Annexure 2
3.	<b>Annexure:</b> Detailed Assessment Criteria (Mandatory)	Annexure 3
4.	<b>Annexure:</b> Assessment Strategy (Mandatory)	Annexure 4
5.	<b>Annexure:</b> Blended Learning (Mandatory, in case selected Mode of delivery is "Blended Learning")	NA
6.	<b>Annexure:</b> Multiple Entry-Exit Details (Mandatory, in case qualification has multiple Entry-Exit)	NA
7.	<b>Annexure:</b> Acronym and Glossary (Optional)	Annexure 5
8.	<b>Supporting Document:</b> Model Curriculum (Mandatory – Public view)	Supporting Document Attached
9.	<b>Supporting Document:</b> Career Progression (Mandatory - Public view)	Supporting Document Attached
10.	<b>Supporting Document:</b> Occupational Map (Mandatory)	Supporting Document Attached
11.	<b>Supporting Document:</b> Assessment SOP (Mandatory)	Supporting Document Attached



12.	Any other document you wish to submit:	Nil
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### 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
<b>Professional Theoretical Knowledge/Process</b>	<p><b>Multidisciplinary and specialized knowledge</b> Possesses broad and deep knowledge and skills to solve problems in specialized fields.</p> <ul style="list-style-type: none"> <li>• Possesses knowledge in multidisciplinary contexts, broadly, within the chosen fields of technology/ skills/ job role.</li> <li>• Deeper knowledge and understanding of specialized field of technology / skills/ job role and its underlying principles</li> <li>• Acquired specialized knowledge and a range of cognitive and practical skills to accomplish tasks like basic design, prototyping, testing so as to solve a problem by selecting appropriate information, methods, tools, and materials.</li> </ul>	<ul style="list-style-type: none"> <li>• Integrates concepts from math, statistics, and computer science to solve domain-specific problems using AI/ML.</li> <li>• Covers multidisciplinary modules like programming, data handling, and algorithm design.</li> <li>• Builds deep understanding of ML principles through supervised/unsupervised learning and evaluation methods.</li> <li>• Includes practical tasks like model design, prototyping, and testing using industry tools.</li> <li>• Trains learners to choose suitable methods, tools, and data for problem-solving.</li> </ul>	5
<b>Professional and Technical Skills/ Expertise/ Professional Knowledge</b>	<p><b>Range of skills along with specialized domain skills</b> Excellent cognitive skills and technical prowess utilized to perform complex tasks with ease, project management expertise, and adept at data analysis for informed decision making.</p> <ul style="list-style-type: none"> <li>• Demonstrates cognitive specialized professional and technical skills required for performing and accomplishing difficult tasks relating to the chosen field/s of technology / skills/ job role; successfully applying techniques in routine or non-routine</li> </ul>	<ul style="list-style-type: none"> <li>• The course builds advanced cognitive and technical skills through modules on machine learning, deep learning, and data analysis, enabling learners to perform complex AI/ML tasks effectively in varied scenarios.</li> <li>• It provides a broad range of practical and professional skills including programming, data preprocessing, model training, and evaluation, with hands-on clarity in applying them to real-world problems.</li> </ul>	5



	<ul style="list-style-type: none"> <li>● Possesses a range of professional and technical skills, displays clarity of knowledge and practice in a broad range of activities/ tasks.</li> <li>● Project Management Skills</li> <li>● Skill to clearly identify the relevant tools or sometimes improvise the available tools and techniques; and has advanced knowledge of materials in difficult situations and different contexts.</li> <li>● Very good in data collecting, organizing information, analysis and communication of results for informed decision making.</li> </ul>	<ul style="list-style-type: none"> <li>● Project-based learning is embedded in the curriculum, helping learners plan, manage, and execute end-to-end AI/ML projects—developing essential project management capabilities.</li> <li>● Students learn to choose appropriate tools (e.g., scikit-learn, TensorFlow, Pandas) and even adapt or combine techniques based on the problem, showcasing tool improvisation and contextual application.</li> <li>● The program trains learners in effective data collection, organization, analysis, and interpretation—supporting strong data-driven decision-making and communication of results.</li> </ul>	
<p><b>Employment Readiness &amp; Entrepreneurship Skills &amp; Mind-set/Professional Skill</b></p>	<p><b>Entrepreneurial mindset, self-management</b> A versatile professional with excellent communication, digital and financial literacy, ethical values, self-management and may have an entrepreneurial mindset.</p> <ul style="list-style-type: none"> <li>● Possesses excellent oral and written communication and collaboration skills for clearly taking the vision of the leaders to the shop floor level workforce.</li> <li>● Possesses very good Digital, Financial and Legal Literacy to use them effectively</li> <li>● Has a good understanding of constitutional, humanistic, ethical, and moral values.</li> <li>● Organization and Time Management</li> <li>● Very good in complex calculations, and mathematical and financial analysis skills for applied solutions.</li> <li>● Has well informed practical understanding of the social, political and work environment.</li> <li>● Exercise self- management within the work contexts.</li> </ul>	<ul style="list-style-type: none"> <li>● The course builds strong oral and written communication skills through regular project presentations, technical report writing, and teamwork-based activities—promoting effective collaboration across functional roles.</li> <li>● Learners enhance their digital literacy by working extensively with coding platforms, data tools, cloud services, and version control systems; financial and numerical reasoning is reinforced through applied data analysis tasks.</li> <li>● Modules emphasize ethical AI practices, including bias detection, data privacy, and responsible model deployment, instilling a strong foundation in ethical, humanistic, and legal considerations.</li> <li>● Time-bound assignments and capstone projects help learners develop organizational and time management</li> </ul>	<p>5</p>



	<ul style="list-style-type: none"> <li>● Emotional Intelligence</li> <li>● May have an entrepreneurial Mind-set for creating a startup/ small business and its end to end management.</li> </ul>	<p>skills, while encouraging independence and accountability in their work.</p> <ul style="list-style-type: none"> <li>● The curriculum nurtures an entrepreneurial mindset by encouraging innovation and solution-building for real-world problems, simulating startup ideation, and covering end-to-end project execution—laying the foundation for small business or tech venture development.</li> </ul>	
<p><b>Broad Learning Outcomes/Core Skill</b></p>	<p><b>Judgement in complex problems</b> Applies advanced technical skills, monitors critical parameters, valuates and improves processes, and solves complex problems with evidence-based judgement in complex problems.</p> <ul style="list-style-type: none"> <li>● Applies advance theoretical knowledge and specialized professional and technical skills involving complex variable environment and contexts</li> <li>● Effective understanding, monitoring and supervision of critical parameters and KPIs or others,</li> <li>● Evaluation and improvement of processes, procedures and work or study activities</li> <li>● Examine and assess the implications and consequences of emerging developments and critical issues.</li> <li>● Make judgement in a range of situations by critically reviewing and consolidating evidences &amp; risks</li> <li>● Constantly and regularly pursue self-paced and self-directed learning to upgrade knowledge and skills that will help accomplish complex tasks or pursue education &amp; research.</li> <li>● Can identifying problems and issues relating to the chosen fields of learning, and ways of future improvements</li> </ul>	<ul style="list-style-type: none"> <li>● The course trains learners to apply advanced theoretical concepts like supervised/unsupervised learning, neural networks, and model optimization in variable real-world contexts, supporting decision-making in complex environments.</li> <li>● Learners monitor critical metrics such as model accuracy, loss functions, and performance KPIs—developing analytical judgment and process supervision capabilities.</li> <li>● Students regularly evaluate and improve ML workflows, from data preprocessing to model deployment, encouraging continuous refinement of technical processes.</li> <li>● Emerging AI trends, such as ethical implications, model fairness, and automation risks, are discussed to help assess long-term impacts and critical issues.</li> <li>● Problem-solving tasks require reviewing datasets, testing multiple approaches, analyzing results, and justifying decisions—building skills to make judgments based on evidence.</li> </ul>	<p>5.5</p>



	<ul style="list-style-type: none"> <li>Exercises judgement based on evaluation of evidence from a range of sources to arrive at a solution to complex real-life problems in chosen fields of technology/ skills/ job role.</li> </ul>	<ul style="list-style-type: none"> <li>The course promotes self-directed learning through independent projects and research-based assignments, encouraging continuous skill and knowledge upgrades.</li> <li>Learners are guided to critically identify bottlenecks in models, workflows, or datasets, and propose data-driven strategies for future improvement and innovation.</li> </ul>	
<p><b>Responsibility</b></p>	<p><b>Team leader – Junior technical supervisor, Technical supervisor or junior/ deputy manager.</b> Highly skilled Technical Supervisor responsible for achieving tangible outcomes, managing change, building teams, and mentoring the workforce.</p> <ul style="list-style-type: none"> <li>Is accountable for determining and achieving personal and /or group tangible outcomes</li> <li>Handles/ / adapts/ accommodates change requirements and change management at the ground/ shop floor level.</li> <li>Team Building</li> <li>Manages processes and procedures within broad parameters for defined activities.</li> <li>Supervises the routine work of others, takes the required responsibility for the evaluation and improvement of work or study activities.</li> <li>At level 4.5 the candidate is Highly skilled and works as a Junior Technical Supervisor.</li> <li>Constantly motivates, guides, mentors and trains the workforce.</li> <li>At level 5.0 the candidate is a Technical supervisor or junior/ deputy manager.</li> </ul>	<ul style="list-style-type: none"> <li>The course prepares learners to take ownership of individual and team-based projects, fostering accountability for outcomes and performance.</li> <li>Learners are trained to adapt ML models and workflows in response to dynamic project needs, reflecting change management at a technical level.</li> <li>Collaborative activities such as group assignments and capstone projects help develop team-building and leadership skills.</li> <li>Students manage tasks like data collection, preprocessing, model training, and result interpretation within structured guidelines—mirroring process supervision roles.</li> <li>The course includes peer review and presentation components where learners evaluate and improve each other’s work, building supervisory and mentoring capacity.</li> <li>The continuous upskilling nature of AI/ML fosters a mindset of mentoring and guiding others in adopting new tools and practices.</li> </ul>	<p>5</p>



	<ul style="list-style-type: none"> <li>Is responsible for managing an independent work unit/ shop floor/ section/ business activity/ assignment</li> </ul>	<ul style="list-style-type: none"> <li>The practical, project-driven approach of the course equips learners to manage a unit or assignment independently—aligned with roles like junior technical supervisor or deputy manager.</li> </ul>	
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### Annexure: 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	Laptop/Computer	Internet with Wi-Fi (Min 2 Mbps Dedicated), Latest version of statistical software packages and IDEs	30

Classroom Aids

The aids required to conduct sessions in the classroom are:

- Whiteboard and Markers
- LCD Projector and Laptop for presentations

### Annexure: 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	UWRAM Edu Solutions Private Limited	Dr. Sujitha Kurup	Sr. AIML Trainer	Door No.82/3273/4, IV Floor, Karimpanal Statue Thiruvananthapuram, Kerala Pin - 695001	9833674927	sujitha@uniqeroboticsedu.com	
2	UWRAM Edu Solutions Private Limited	Bansan Thomas George	Founder & CEO	Door No.82/3273/4, IV Floor, Karimpanal Statue Thiruvananthapuram, Kerala Pin - 695001	+971 56 525 6319	bansan@uniqeroboticsedu.com	
3	Curvelogics Advanced Technology Solutions Pvt. Ltd.	Brijesh Madhavan	Director	2nd Floor, Asiatic Business Center, Kulathur, Trivandrum Kerala 695586	9880103691	brijesh@curvelogics.com	
4	VisionCog Research and Development Pvt. Ltd.	Dr. Ram Prasad K	Director	Civil Station Road, Peroorkada Thiruvananthapuram 695005, Kerala, India	7356135445	ram-krish@visioncog.com	
5	FlyTxt Mobile Solutions Pvt. Ltd.	Rakesh Mohan	Asst. Vice President	Marconibaan 1D, 3439 MR Nieuwegein, The Netherlands	9446263311	Rakesh-mohan@flytxt.com	
6	Creative App Lab	Sujina S	Operation Manager	IIC Websolutions Office, 4 th Floor, Nila Building Technopark, Thiruvananthapuram, Kerala, India	9495048437	fss.sujina@gmail.com	
7	Fresh to Home	Jishnu PG	Lead Software Engineer	Building No. 38/4111/H13, National Pearl Star, Edapally, North Village, Kochi	9497639269	jishnupgtr@gmail.com	
8	RM Educations Pvt. Ltd.	Monisha M	Project Manager	Carnival, Unit No.8A, Technopark Rd, PO, Thiruvananthapuram, Kerala 695581	9539174009	monishaektha@gmail.com	



9	Ab-InBev	Vijoe Mathew	Analytics Advisory	Bengaluru, Karnataka, India		Vijoe.Mathew@ab-inbev.com	
10	Appiness Interactive Pvt.Ltd	Elizabeth George	Software Engineer (Web)	406, 24th Cross Rd, Siddanna Layout, Banashankari Stage II, Banashankari, Bengaluru, Karnataka 560070	8111909389	sreyageorge.e@gmail.com	
11	IQue Ventures Pvt. Ltd	Kurian C George	Business Development Associate	No. 39/2475-B1 Suite 670, LR Towers, SIRRA 104, Silanatha Road, Palarivattom, Ernakulam, Kerala - 682025.	8111909389	kuriangeorgechaletu@gmail.com	
12	TCS	Renju Paul	Consultant	TCS, Bengaluru	8086315514	renju.paul@yahoo.com	
13	IBM	Anjana P A	Software Developer	IBM, Infopark Campus, Kochi, Kerala 682042, India	8943586251	anjanaaji99@gmail.com	
14	INFOSYS LTD	Devanarayanan J A	Senior Systems Engineer	Infosys Ltd. Trivandrum.	9447270493	devanarayananja98@gmail.com	
15	G10X	Alvin Jose	Software Engineer	G10X, Infopark Kochi	9747677576	ajalvin007@gmail.com	
16	Brain Tower	Salim Al-barami		Coral Tower, Office 3D 3rd Floor, Al Khuwair, Muscat, Oman			
17	Revelado Innovation Pvt. Ltd	Jomy Abraham	Software Engineer	202B Oceanus Serenity, Arasumoodu, Kulathur P O, Kazhakootam, Trivandrum - 695582	9633830859	jomy@futuremug.com	

### Annexure: 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
2025	150	150	75	75	25	25
2026	200	200	100	100	35	35
2027	250	250	125	125	40	40

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
Version 1	2022	190	117	58	31	88	53	34	15	22	13	5	3
Version 1	2023	188	105	52	28	98	60	31	16	13	8	6	3
Version 1	2024	85	-	-	-	50	-	-	-	5	-	-	-

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

**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: 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
<b>ASP/ITS/N0107: Python Programming with Scientific and Mathematical Applications</b>	Write and debug Python programs using correct syntax, data types, control structures, and file operations.	7	7	-	6
	Use NumPy and SciPy libraries to perform array manipulations and scientific computations.				
	Create and interpret visualizations using Matplotlib for scientific data.				
	Connect to databases using Python and perform data insertion, retrieval, and updates.				
	Solve linear algebra problems using Python for scientific and engineering applications.				
	Simulate and analyze random processes using appropriate Python libraries and techniques.				
	Formulate and solve basic optimization problems using tools like SciPy and PuLP.				
<b>Total Marks</b>	<b>7</b>	<b>7</b>	<b>-</b>	<b>6</b>	
<b>ASP/ITS/N0105: Core Concepts in Machine Learning</b>	Explain key machine learning concepts, types of learning, and common algorithms.	7	7	-	6
	Build and evaluate regression models using techniques like linear and polynomial regression on real-world data.				
	Apply classification algorithms such as logistic regression, decision trees, and SVM to labeled datasets.				
	Use non-parametric techniques like K-Nearest Neighbors for classification tasks with unknown data distributions.				
	Perform clustering and dimensionality reduction using unsupervised learning methods like k-means and PCA.				
	Evaluate model performance using metrics such as confusion matrix, cross-validation, precision-recall, and ROC curves.				
<b>Total Marks</b>	<b>7</b>	<b>7</b>	<b>-</b>	<b>6</b>	



<b>ASP/ITS/N0103: Bayesian Methods and Text Mining</b>	Apply Bayesian inference concepts including prior, likelihood, and posterior in probabilistic models.	7	7	-	6
	Implement Gaussian Mixture Models using Python to represent and analyze complex data distributions.				
	Use MCMC, Gibbs sampling, or variational inference to approximate posterior distributions in Bayesian models.				
	Preprocess textual data through tokenization, stop-word removal, and normalization techniques.				
	Extract features from text using TF-IDF, word embeddings, or other vectorization techniques.				
	Perform sentiment or topic analysis on unstructured text using appropriate Python libraries.				
	<b>Total Marks</b>				
<b>ASP/ITS/N0106: Deep Learning Foundations to Prompt Engineering</b>	Explain the basic concepts and significance of deep learning and neural networks in modern AI.	7	7	-	6
	Describe the components and flow of a neural network, including neurons, layers, and activation functions.				
	Implement backpropagation algorithms for training neural networks on structured datasets.				
	Apply regularization methods like L1, L2, and dropout to prevent overfitting in deep learning models.				
	Build and evaluate convolutional and recurrent neural networks for tasks such as image recognition and sequence prediction.				
	Explain the principles and applications of generative models including VAEs, GANs, and GPTs.				
	Develop generative models using deep learning frameworks to synthesize text or image data.				
	Apply transformer-based architectures and large language models (BERT, GPT, LLaMA, PaLM) for complex NLP tasks.				
	Implement zero-shot and few-shot learning scenarios using foundation models with minimal labeled data.				
	Design, test, and refine prompts to guide large language models effectively for task-specific outcomes.				
<b>Total Marks</b>	<b>7</b>	<b>7</b>	<b>-</b>	<b>6</b>	



<b>ASP/ITS/N0108: AI in the Cloud: Deployment, Ethics &amp; Intelligent Agents</b>	Explain core cloud computing concepts and their application in deploying AI/ML models at scale.	7	7	-	6
	Utilize AI/ML services on AWS, Azure, or Google Cloud to train and deploy machine learning workflows.				
	Identify ethical risks in AI systems and apply practices to ensure fairness, transparency, and data privacy.				
	Use Hugging Face tools to fine-tune, deploy, and serve pre-trained NLP or generative models on the cloud.				
	Plan and execute an end-to-end capstone project using unsupervised or combined techniques.				
	Demonstrate the deployment of AI models using inference APIs and managed environments.				
	Implement basic autonomous agent systems that perform planning, tool usage, and task execution.				
<b>Total Marks</b>	<b>7</b>	<b>7</b>	<b>-</b>	<b>6</b>	
<b>ASP/ITS/N0109: On the Job Training</b>	Internship			170	10
	<b>Total Marks</b>			<b>170</b>	<b>10</b>
<b>DGT/VSQ/N0101: Employability Skills</b>	Introduction to Employability Skills	20	30		
	Constitutional values – Citizenship				
	Becoming a Professional in the 21st Century				
	Basic English Skills				
	Communication Skills				
	Diversity & Inclusion				
	Financial and Legal Literacy				
	Essential Digital Skills				
	Entrepreneurship				
	Customer Service				
	Getting ready for apprenticeship & Jobs				
<b>Total Marks</b>	<b>20</b>	<b>30</b>			
<b>Grand Total</b>	<b>55</b>	<b>65</b>	<b>170</b>	<b>40</b>	



### 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.

1. ASAP follows an assessment framework which provides weightage for all the activities connected with skilling in which students get involved during the training program. The components of assessment include Attendance, Assignments, Internal Assessments and 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 should be reflected as marks and overall assessment by awarding grades. The report card/certificate will state only the overall grade.

1.1 Weightages: For Short-term training courses (knowledge based) aligned to NSQF at Level 4 and above, the assessment shall be done with 60% weightage for practical component and 40% weightage for theoretical part.

Theory		Practical	
Type of Assessment	Max Marks	Type of Assessment	Max Marks
Assignment 1	40	Practical Assignment	40
Internal Assessment 1	60	Internal Practical assessment	60
Assignment 2	40	Internship/OJT Evaluation	100
Internal Assessment 2	60	Viva	90
Final Assessment	100	Attendance	10
Total	300	Total	300

1.2 Attendance Criteria: Skill based sessions and training are delivered through lectures, discussions, demonstrations, and experiments ensuring student participation during daily learning activities. So those who miss such 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 and batch, the student’s attendance will be marked daily, and marks will be



awarded accordingly on course completion before final assessment. Students whose attendance fall below 70% will not be eligible for final assessment and course completion certificate.

Point Scale	Marks
Attendance Above 90%	10
86 to 90%	8
80 to 85%	5
70 to 80%	3
Below 70%	0

## 2. Internal assessment & student involvement:

2.1 A Continuous and Comprehensive Evaluation (CCE) shall be done for candidates for Assignments and Internal Assessments.

2.2 The Assessment Plan: The outcome-based assessment followed by the Assessment Division for the course offered will have the following design:

### 2.2.1 Continuous and Comprehensive Skill Assessment

- a) Knowledge and Application tests carried out at four intervals during a skill course.
- b) Attendance, Assignments, and Internal Assessments

### 2.2.2 Course End Assessment – Performance-based

- a) Practical test/Hands on experience/Skill test in an OJT Centre/SDC
- b) Project Presentation and Viva voce
- c) Final Assessment with MCQ and Descriptive answer writing.

## 2.3 Assignments:



Students can complete assignments according to his/her preferred approach. This might involve reading technical study materials, 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 student's learning.

Students have to submit two assignments, the first after coverage of 25% of the total syllabus and the second assignment after coverage of 75% of the total syllabus. Both assignments shall be evaluated and assigned a score. The scores should be marked on the student's assignment sheets by the Trainer after evaluation. The scores shall be entered in the student profile twice. The first shall be made on completion of 25% of the initial part 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.

#### 2.4 Internal Assessment:

There are two internal tests, one after completing 50% of the syllabus and the other at 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 the question bank already generated. Of these, for each test, 60% of the questions are theoretical and in the form of objective type and the rest 40% will be descriptive questions which will be oriented towards procedure/strategies/ways of doing/ ethics of doing etc. The duration of the first test after 50% of the total session is 1 hr and the second test after completion of the total syllabus is 3hrs. The duration is so fixed to ensure coverage of the total learning events. The grades shall be entered in the student's profile twice. The first entry shall be made on completion of the 50% of the initial syllabus and the second entry shall be made on completion of the rest of the syllabus.

### 3. Responsibility of Assessment Division of ASAP Kerala

**Final Assessment:** Final assessment will be conducted by ASAP Kerala. The questions will be generated randomly from the question bank. The Assessment Division of ASAP Kerala will coordinate the assessment process with the Cluster, Training and Curriculum Division.

3.1 The Assessment Division with support of the Curriculum Division and Cluster will prepare the Question Bank. The Question Bank is prepared at the time of initial course creation by Subject Matter Experts identified by the Curriculum division in consultation with respective Clusters. For courses already created the question banks are prepared by the Assessment Division, Cluster and Curriculum Division in consultation with the Training Division. The Question Bank will be used to prepare the question paper for the final assessment. The assessment division shall conduct the assessment through the assessors. The assessment



shall be monitored by the assessors on the assessment platform. The final answer sheets shall be evaluated by experts in the field and the final scores with grades shall be shared by the assessment division to the certification division for final certificate issue.

3.2 Randomly selected questions from the Question bank developed will be used for Final Assessments. 20% of questions will be replaced with new ones every year and a blueprint that elaborates weightage to QP/NOS, degree of difficulty and application type questions will be used for the assessment. This will be done by a committee formed from members of cluster, training, curriculum and assessment division.

3.3 Question Bank: A Question Bank will be developed by experts following prescribed norms. Selected questions will be enlisted in the bank. The Question Bank will have 6 times the requirement of questions for the first year to start with and thereafter 20% questions will be replaced every year with new ones in each category with the help of experts following the same procedures.

3.3.1 Generation of Question Paper: Each batch will have a unique user id and the trainer will be given access to the Question Bank once for each category of the test. They will be given access to the test only at the prescribed hour on the day of assessment. Question paper will be generated from the Question Bank at random following 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.

3.4 Grading Scheme: ASAP Kerala shall follow the Grading Scheme given below Grade Score/percentage range

Score	Grade
90-100	A+ (Excellent)
80-89	A (Very Good)
70-79	B (Good)
60-69	C (Above Average)
50-59	P (Pass)



Below 50	F (Fail)
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### 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
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

#### Glossary

Term	Description
<b>National Occupational Standards (NOS)</b>	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.
<b>Qualification</b>	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
<b>Qualification File</b>	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.
<b>Sector</b>	A grouping of professional activities on the basis of their main economic function, product, service or technology.
<b>Long Term Training</b>	Long-term skilling means any vocational training program undertaken for a year and above. <a href="https://ncvet.gov.in/sites/default/files/NCVET.pdf">https://ncvet.gov.in/sites/default/files/NCVET.pdf</a>