



GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT & ENTREPRENEURSHIP
DIRECTORATE GENERAL OF TRAINING

COMPETENCY BASED CURRICULUM

CERTIFICATE COURSE ON

INTRODUCTION TO ARTIFICIAL INTELLIGENCE (AI)



NSQF LEVEL- 3.5

SECTOR – IT & ITES

INTRODUCTION TO ARTIFICIAL INTELLIGENCE (AI)

Duration: 7.5 Hours

NSQF LEVEL- 3.5
(Version: 1.0)

Designed in 2024

Developed By

Ministry of Skill Development and Entrepreneurship
Directorate General of Training
&
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1. COURSE INFORMATION

1.1 GENERAL

The National Programme on Artificial Intelligence (NPAI) Skilling Framework report by NCVET provides a comprehensive plan for AI skill development in India, detailing the AI skill gap, current skill status, and sector-specific job role analysis. It emphasises ethical AI and suggests a skilling model across various sectors. The report categorises skilling into three categories:

- AI for All
- AI for Many
- AI for Few

Referring to the framework and knowledge progression, a curriculum framework for the 7.5 hours course tailored to the 'AI for All' category has been prepared. This course aims to augment the existing 120-hour employability skills curriculum with fundamental AI knowledge. It lists three key knowledge areas the report recommends, broken down into objectives, outcomes, and topics.

1.2 COURSE STRUCTURE

Table below depicts the distribution of training hours across various course elements:

S No.	Course Element	Notional Training Hours
1.	Professional Knowledge (Trade Theory)	7.5
	Total	7.5

1.3 ASSESSMENT & CERTIFICATION

The trainee will be tested for his skill, knowledge and attitude through summative assessment at the end of the course as notified by the DGT from time to time.

The All-India Trade Test will be conducted by Controller of examinations, DGT as per the guidelines. The pattern and marking structure are being notified by DGT from time to time. The learning outcome and assessment criteria will be basis for setting question papers for final assessment.

2. GENERAL INFORMATION

Name of the Trade	INTRODUCTION TO ARTIFICIAL INTELLIGENCE (AI)
NOS Covered	SSC/N9525
NSQF Level	3.5
Duration of Craftsmen Training	7.5 Hours
Entry Qualification	Perusing NTC/NAC
Instructors Qualification	MBA/BBA/Any Graduate/Diploma in any discipline with Two years' experience with short term ToT Course in Employability Skills with micro credential of AI for All. (Must have studied English/ Communication Skills and Basic Computer at 12th / Diploma level and above) OR Existing Social Studies Instructors in ITIs with short term ToT Course in Employability Skills.
List of Tools and Equipment	As per Annexure – I

3. LEARNING OUTCOME

Learning outcomes are a reflection of total competencies of a trainee and assessment will be carried out as per the assessment criteria.

LEARNING OUTCOMES

1. Gain a basic understanding of AI, its history, principles, and types. (NOS: SSC/N9525)
2. Explore the use of AI and Generative AI tools in creating various digital content and in Education. (NOS: SSC/N9525)
3. Understand the ethical considerations and responsible use of AI. (NOS: SSC/N9525)

4. SYLLABUS

Duration	Reference Learning outcome	Professional Skills & Knowledge
0.5 Hour	Gain a basic understanding of AI, its history, principles, and types.	Introduction to AI - Understanding of AI: definition and scope. - Historical context for AI's evolution. - Benefits of using AI
0.5 Hour		Types of AI - Narrow (or Weak) AI, which is designed for specific tasks. - General (or Strong) AI, which has broader, human-like cognitive abilities. - Real-world examples and comparisons will be used to illustrate these concepts.
1.5 Hour		Different forms of data, data sources and data sets - Various forms of data (structured vs. unstructured), - the multitude of sources from which data can be harvested (including public datasets and real-time data streams) - The significance of datasets in training AI models. Understanding these elements is crucial for grasping how AI systems interpret, analyse, and learn from information. - Concept of big data
1.0 Hour		Overview of Machine Learning and Deep Learning - Introduction to ML - Supervised Learning - Unsupervised Learning - Reinforcement Learning - Concept of Deep learning.
2.5 Hour	Explore the use of AI and Generative AI tools in creating various digital content and in Education.	Generative AI; AI Tools for Images, Audio, Video and text - Difference between AI and Generative AI - Prompt Writing Techniques - Use of AI tools for Images, Audio, Video, text and other office applications. - Use of AI in Education.
0.5 Hour	Understand the ethical considerations and responsible use of AI.	Ethical Considerations in AI; AI Bias and Privacy - Threats of AI. - Social Impacts and ethical use of AI.
0.5 Hour		Ethical Dilemmas in AI; Case Studies Focusing on real-world scenarios and case studies, this topic explores various ethical dilemmas posed by AI technology.
0.5 Hour	Review key concepts through an MCQ test and Q&A	

6. ASSESSMENT CRITERIA

LEARNING OUTCOME	ASSESSMENT CRITERIA
1. Gain a basic understanding of AI, its history, principles, and types. (NOS: SSC/N9525)	Identify key historical milestones in AI.
	Differentiate between Narrow AI and General AI.
	Identify types of data and data sources and explain the significance of data.
	Explain the basics of machine learning and deep learning.
2. Explore the use of AI and Generative AI tools in creating various digital content and in Education. (NOS: SSC/N9525)	Describe the functionality of specific AI tools for creating images, music, documents.
	Illustrate the use of AI in education.
3. Understand the ethical considerations and responsible use of AI. (NOS: SSC/N9525)	Identify common ethical challenges in AI such as bias and privacy.
	Propose solutions for ethical dilemmas in AI usage.

ANNEXURE-I

LIST OF TOOLS & EQUIPMENT			
INTRODUCTION TO ARTIFICIAL INTELLIGENCE (AI)			
S No.	Name of the Tools and Equipment	Specification	Quantity
1.	Desktop Computer	CPU: 32/64 Bit, 7 th Generation or higher, i3 or latest processor, Speed: 3 GHz or Higher. RAM: 8 GB or higher, 1TB HDD OR 240 GB SDD. with USB Mouse, USB Keyboard and Monitor (as available in the market). Or all in one PC (with same configuration as above) And Licensed preinstalled Operating System.	20 Nos.
2.	Anti-Virus	Latest	As required
3.	Scanner cum Printer	A4 Size Laser	1 no.
4.	AI/Generative AI tools	Any opensource/ Cloud based	As required
5.	Computer Tables		As required
6.	Computer Chairs		As required
7.	LCD Projector		1 no.
8.	White Board 1200mm x 900mm		1 no.

NOTE: If Above Tools, Equipment's are available in the IT Lab running on the ITI the same may be utilized.

ANNEXURE-II

The DGT sincerely acknowledges contributions of the Industries, State Directorates, Trade Experts, Domain Experts and all others who contributed in designing/ revising the curriculum. Special acknowledgement is extended by DGT to the following expert members who had contributed immensely in this curriculum.

List of members attended the Trade Committee Meeting for designing of Introduction to Artificial Intelligence (AI) syllabus under Micro Credential held on 08.05.2024 at CSTARI, Kolkata.			
Sl. No.	Name and Designation (Shri/Smt./Kumari)	Organization with Address	Remarks
1.	Sunil Kumar Gupta, DDG (ER)	CSTARI, Kolkata	Chairman
2.	Gautam Ch. Saha, JD/HOD	CSTARI, Kolkata	Member
3.	Brindaban Das, DD/HOO	CSTARI, Kolkata	Member
4.	Anurag	STQC, Kolkata	Member
5.	Ashok Bandyopadhyay, Director	C-DAC, Kolkata	Member
6.	Niladri Roy	TCS, Kolkata	Member
7.	Reema Nandi	Accenture, Kolkata	Member
8.	Avishek Paul, Asst. Professor	Techno India	Member
9.	Amit Kumar Mandal, Asst. Professor	Bengal Institute of Technology (A unit of Techno India Group)	Member
10.	Pradip Mukhopadhyay, Sr. Advisor	Former M D WEBEL, Sr. Advisor, MAKAUT	Member
11.	Manohar Sadashiv Desai, Technical Head	Skill Bahn LLP, Thane, Maharashtra	Member
12.	Kotresh H B, Partnership Specialist	Quest Alliance	Member
13.	Soorya Menon, EdTech Specialist	Quest Alliance	Member
14.	Akshay Sanjay Mulik, Software Developer	Grok Learning Pvt. Ltd., Mumbai, Maharashtra	Member
15.	Akhilesh Pandey, AD	CSTARI, Kolkata	Member
16.	Sk. Altaf Hossain, AD	CSTARI, Kolkata	Member
17.	P. K. Bairagi, T.O.	CSTARI, Kolkata	Member
18.	KVS Narayana, T.O.	CSTARI, Kolkata	Member
19.	B K Nigam, T.O.	CSTARI, Kolkata	Member
20.	Nirmalya Biswas, PA to Director	CSTARI, Kolkata	Member
21.	Pradip Biswas, Jr.D/M	CSTARI, Kolkata	Member
22.	Jinendran PK	CSTARI, Kolkata	Member