NIELIT Certificate Course in Artificial Intelligence using Python

Objective:

Artificial intelligence is broad and fast growing sub-field of computer science concerned with the intelligence demonstrated by machines, in contrast to the intelligence displayed by humans. This course covers all the foundation skills necessary to start the Artificial Intelligence and its implementation in Python.

Python is a open-source language with a simple syntax, and a powerful set of libraries. It is an interpreted language, with a rich programming environment. It is widely used in many scientific areas for data exploration and prediction, Expert System, Neural network, Speech recognition and Natural language processing.

Expected Job Roles

- Python Developer

Duration:

- 90 hrs. /6 Weeks
- 3hrs. Daily

Course Outline:

Sl. No	Module Title	Duration (Hours)		
		Theory	Lab	Total
1	**Introduction of Artificial Intelligence (AI) and its Application**	2	0	2
2	**Python Programming**	20	26	46
3	**Artificial Intelligence and Machine learning & its Application**	10	12	22
4	**Mini Project**	8	12	20
	Total Duration	**40**	**50**	**90**

Prerequisites:

Familiarity with programming language will be beneficial

Eligibility:

12th pass/ ITI /Diploma/BE / B.Tech, MCA, MSc / BSc (IT / Computer Science /Electronics) pursuing or equivalent of any of these.

Online Theory / Practical Class Delivery Mode:

(Using any one of the following tools)

- NIELIT Web Conferencing tool using Jitsi.
- Cisco WebEx.
- Microsoft Team.
- Google Meet

E-contents, Presentations, Assignments, programs etc can be shared using E-mail/whatsApp/Google classroom

Training Fees:

Rs. 1000/-

Payment towards Course fee paid through:

Name	**: NIELIT Lucknow**
Bank name	**: Punjab National bank**
Account Number	**: 3926002105001894**
IFSC Code	**: PUNB0392600**

*Once Fees paid will not be refunded in any case

Registration Process:

After fee payment a link of registration form will be provided to the students for Online Registration.

Examination:

1. The Student shall be completing the per day module after having self-assessment through daily quiz (10 MCQ), which shall be in line with the content covered per day.
2. There shall be an online test for assessment at the end of the course

Certificate:
NIELIT Lucknow will provide training certificate to all the participants after successfully completion of training program.

Detailed Syllabus and Learning Outcome:

S. No	Chapter Name	Course Outline	Duration (Hours)		Learning Outcome
			Theory	Lab	
1	**Module 1 - Introduction of Artificial Intelligence (AI)** -	**1.1** What is Artificial Intelligence **1.2** Basics concept of Artificial Intelligence **1.3** Necessity of Learning AI **1.4** Application of AI **1.5** Examples of AI **1.6** Why Python for AI	2	0	After completion of this module, the candidate will be able to : • Understand the concept of AI and use of Python in AI

2	Module 2 - Python Programming	2.1 **Introduction to Python** - 2.2 **Conditional Statements** 2.3 **Lists**- 2.4 **Tuple–** 2.5 **Dictionaries–** 2.6 **Functions –** 2.7 **OOPs Concept –** 2.8 **Modules** -- 2.9 **Exception Handling** - 2.10 **Input-Output** 2.11 **Python Date and Time** - 2.12 **Database** - 2.13 **Introduction to GUI programming**-	20	26	After completion of this module the participants will be able to • Basic programming of python language. • OOP's Concept and implementation. • Connectivity of database with python programs. • GUI programming using Tkinter
3.	Module3 - Artificial Intelligence and Machine learning & its Application	3.1 **Introduction and Installation of NumPy, Panda and Matplotlib and setting Environment.** 3.2 **Data Manipulation using Panda**- 3.3 **Data Visualization using NumPy and Matplotlib**- 3.4 **Machine Learning**- 3.5 **Supervised Learning** - 3.6 **Unsupervised/Deep Learning**- 3.7 **Application of Artificial Intelligence** -	10	12	After attending this module the participants will be able to • Data Manipulation using Numpy, Pandas and Matplotlib. • Preprocessing of machine learning. • Various machine learning algorithms and their implementation
4.	Module4 - Mini Project	4.1 **Case study :Speech Recognition** - 4.2 **File/Text to Voice Conversion using Packages/ Libraries –** 4.3 **Machine Learning Application** 4.4 **Mini Project :**	8	12	After completion of the project students will be • Able to develop own speech recognition system. • Able to apply machine learning algorithm on given data. • Able to develop mini project GUI and database.
Total Hours = 90			**40**	**50**	

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Recommended hardware/software tools:

1. PC with Windows7/Windows10 with 4 GB RAM.
2. Python 3.x,Anocanda

Course Name	Certificate Course in Artificial Intelligence using Python	Vertical	Artificial Intelligence using Python
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