Certified in Artificial Intelligence

1	**Name of Course/Module/Subject**	Certified in Artificial Intelligence
2	**Course /Subject Code**	CIA782
3	**Training specialization**	
4	**Version**	
5	**Prerequisite/Requirement for Registration**	
6	**Qualification**	GRADUATE
7	**Audiences**	• ENTRY_LEVEL • ENGINEERS
8	**Methodology**	• LECTURE • SLIDES • CASE_STUDIES • LABS • GROUP_DISCUSSION • Q_AND_A
9	**Person-in-Charge**	
10	**Trainer List**	Tarun Sukhani,
11	**Course Description**	The need for AI specialists exists in just about every field as companies seek to give computers the ability to think, learn and adapt. This Artificial Intelligence course provides training in the skills required for a career in AI.

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12	**Course Summary**		Becoming an Artificial Intelligence Engineer puts you on the path to an exciting, evolving career that is predicted to grow sharply into 2025 and beyond. Artificial intelligence and Machine Learning will impact all segments of daily life by 2025, with applications in a wide range of industries such as healthcare, transportation, insurance, transport and logistics and even customer service. The need for AI specialists exists in just about every field as companies seek to give computers the ability to think, learn and adapt. This Artificial Intelligence course provides training in the skills required for a career in AI.
13	**Course Tagline**		
14	**Learning Objectives**		- Acquire an understanding of the key trends in AI and how these are influencing the future of business - Gain confidence in the management of AI projects - Identify the pitfalls and ethics concerns associated with AI - Provides a validation for your skills in improving career opportunities - Apply Supervised, Unsupervised, and Reinforcement Learning algorithms to a variety of use cases - Gain an understanding of sophisticated Deep Learning approaches to Big Data datasets - Certification In Artificial Intelligence Expert Approved by HRDF
15	**Course Detail**		42 Modules
6 days			
	Module 1 - Introduction to Artificial Intelligence - The AI landscape - Brief history of the AI revolution		45 mins
	Short Break		15 mins
	Module 2 - Introduction to Artificial Intelligence - Characteristics of AI - Advantages and Disadvantages of AI		45 mins
	Short Break		15 mins
	Module 3 - Understand the theory behind Artificial Intelligence - Agents and Environment - Structure of Agents		45 mins
	Module 4 - Recap and Q&A		15 mins
	Lunch		1 hour

	Module 5 - Understand the theory behind Artificial Intelligence • Algorithms and Neural Networks • The Parts of Artificial Intelligence	45 mins
	Short Break	15 mins
	Module 6 - Understand the theory behind Artificial Intelligence • Linear Algebra • Probability and Statistics	45 mins
	Short Break	15 mins
	Module 7 - AI in Recent Times • The role of Big Data • Cloud Computing and AI • Mobile Computing and AI	45 mins
	Short Break	15 mins
	Module 8 - Future of Artificial Intelligence • Future of work • Challenges of Artificial Intelligence	45 mins
	Module 9 - Recap and Q&A	15 mins
	Module 10 - End of Day 1	
	Module 11 - Machine Learning and Deep Learning • Image Recognition • Speech Recognition	45 mins
	Short Break	15 mins
	Module 12 - Machine Learning and Deep Learning • Search • Optimization	45 mins
	Short Break	15 mins
	Module 13 - Machine Learning and Deep Learning • Prediction • Understanding Data – Pattern Recognition	45 mins

	Module 14 - Recap and Q&A	15 mins
	Lunch	1 hour
	Module 15 - Natural Language Processing • Natural Language Processing- What is used for? • Language Models	45 mins
	Short Break	15 mins
	Module 16 - Natural Language Processing • Information Retrieval and Information Extractio • Syntactic Analysis	45 mins
	Short Break	15 mins
	Module 17 - Natural Language Processing • Augmented Grammar and Semantic Analysis • Machine Translation	45 mins
	Short Break	15 mins
	Module 18 - Natural Language Processing • Speech Recognition • Difference Between Speech Recognition and Natural Language Processing	45 mins
	Module 19 - Recap and Q&A	15 mins
	Module 20 - End of Day 2	
	Module 21 - Reinforcement Learning • What is Reinforcement learning • Passive Reinforcement learning • Active Reinforcement learning	45 mins
	Short Break	15 mins
	Module 22 - Reinforcement Learning • Searching in Reinforcement learning • Applications of Reinforcement learning	45 mins

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	Short Break	15 mins
	Module 23 - Model Creation and Validation • Prediction: linear regression, nonparametric regression • Forecasting: ARIMA and RNN's	45 mins
	Module 24 - Recap and Q&A	15 mins
	Lunch	1 hour
	Module 25 - Model Creation and Validation • Classification: logistic regression, decision trees, SVM's. • Clustering: k-means, hierarchical clustering.	45 mins
	Short Break	15 mins
	Module 26 - Model Creation and Validation • Supervised vs. unsupervised vs. semi-supervised learning. • Dimension reduction: principal components • Languages and environments (e.g. R, Python) and standards (PMML).	45 mins
	Short Break	15 mins
	Module 27 - Perception • What is Vision Perception? • Image Formation	45 mins
	Short Break	15 mins
	Module 28 - Perception • Image Processing Operation ○ Edge Detection ○ Segmentation • Image Processing Operation ○ Finding Depth and Finding Orientation ○ Object Recognition	45 mins
	Module 29 - Recap and Q&A	15 mins
	Module 30 - End of Day 3	
	Module 31 - Neural Network • What is a Neural Network? • Neural Network Representation	45 mins

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	Short Break	15 mins
	Module 32 - Neural Network • Types of Neural Network • Feedforward Neural Network	45 mins
	Short Break	15 mins
	Module 33 - Neural Network • Convolutional Neural Network • Recurrent Neural Network • Neural Network Learning- Backpropagation	45 mins
	Module 34 - Recap and Q&A	15 mins
	Lunch	1 hour
	Module 35 - Data Visualization • Practical and effective visualization: beyond bar charts. • Finding the unexpected: the role of visualization in exploratory analysis	45 mins
	Short Break	15 mins
	Module 36 - Data Visualization • Communicating findings: the role of visualization in communicating Data Science outputs. • Standard tools: R	45 mins
	Short Break	15 mins
	Module 37 - Data Visualization • Standard tools:Tableau • Standard tools: D3	45 mins
	Short Break	15 mins
	Module 38 - Data Visualization • How AI is enhancing customer engagement • How AI is optimizing business processes – BPA • How AI is generating insights – pattern recognition	45 mins
	Module 39 - Recap and Q&A	15 mins

	Module 40 - End of Day 4	
	Module 41 - AI Application in Business • Applying the AI framework • Employee on-boarding	45 mins
	Short Break	15 mins
	Module 42 - AI Application in Business • Invoice processing • Payments	45 mins
	Short Break	15 mins
	Module 43 - AI Application in Business • Logistics • SCM	45 mins
	Module 44 - Recap and Q&A	15 mins
	Lunch	1 hour
	Module 45 - AI Application in Business • Customer Service and Ticketing • IoT	45 mins
	Short Break	15 mins
	Module 46 - Use Cases of Artificial Intelligence • Healthcare • Robotics	45 mins
	Short Break	15 mins
	Module 47 - Use Cases of Artificial Intelligence • Entertainment • Property	45 mins
	Short Break	15 mins
	Module 48 - Use Cases of Artificial Intelligence • Manufacturing • Banking, Finance, and Insurance	45 mins

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	Module 49 - Recap and Q&A	15 mins
	Module 50 - End of Day 5	
	Module 51 - Starting an AI Journey • Aligning AI with Business Strategy • Understanding your AI ambitions	45 mins
	Short Break	15 mins
	Module 52 - Starting an AI Journey • Assessing your AI maturity • Creating your AI heat map	45 mins
	Short Break	15 mins
	Module 53 - Starting an AI Journey • Developing the AI Business Case • Understanding Change Management	45 mins
	Module 54 - Recap and Q&A	15 mins
	Lunch	1 hour
	Module 55 - Starting an AI Journey • Developing your AI Road Map • Creating your AI Strategy	45 mins
	Short Break	15 mins
	Module 56 - AI Prototypin • Build vs Buy vs Platform • Creating your first AI produc	45 mins
	Short Break	15 mins
	Module 57 - AI Prototypin • Understanding Data Training • Tuning of data	45 mins
	Short Break	15 mins

	Module 58 - AI Prototypin • The challenge of poor data and unintended bias • Becoming over-dependent on AI	45 mins
	Module 59 - Recap and Q&A	15 mins
	Module 60 - End of Day 6	
End of the course QA		
Time Summary		
	Total Hours of Course	31.5 hours	
	Total Hour	42 (modules) x 30 min = 150 min	
	Total Consulting Days	-	
	Total Days	6 days	