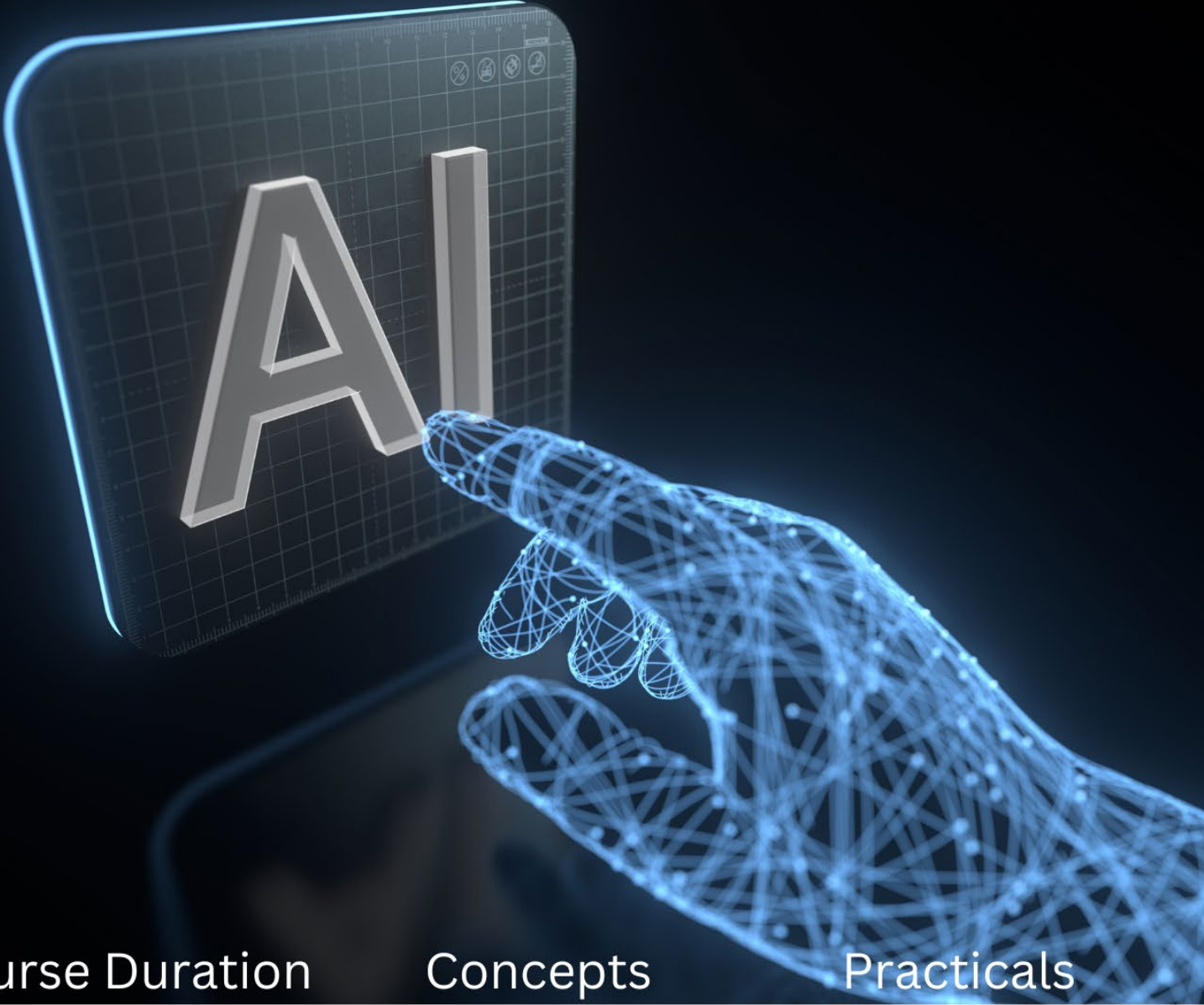




Department of Higher Education
Madhya Pradesh

उच्च शिक्षा विभाग
मध्यप्रदेश शासन



Course Duration

3 Months

Concepts

50 Hours

Practicals

40 Hours

Artificial Intelligence Builder
6 Credit Course

A Joint Initiative with



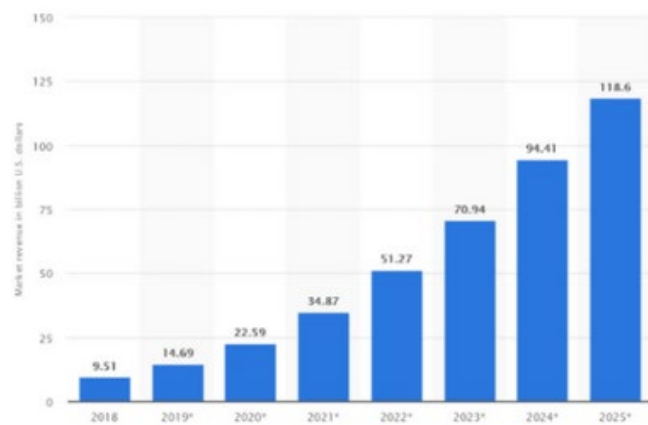
FOUNDATION FOR INNOVATION
AND TECHNOLOGY TRANSFER

भारतीय प्रौद्योगिकी संस्थान दिल्ली
Indian Institute of Technology Delhi

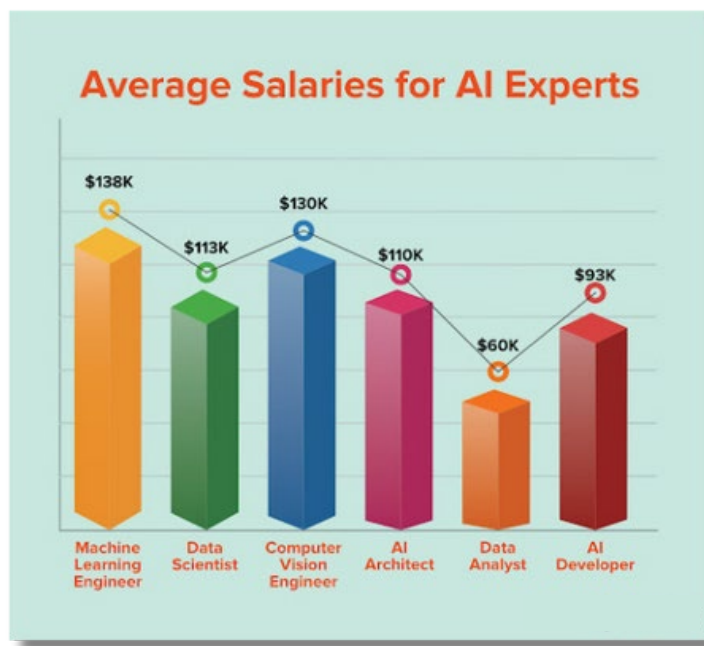
Why Artificial Intelligence

Experts at Nexford University say that AI and machine learning will help workers by creating more occupations than it replaces. That said, to ride the wave and build a new career, you must have procured the skills necessary to get the job done. If you're exposed to AI and are looking to pivot into an AI-focused role, demonstrating your knowledge and experience with AI development can give you an edge.

Artificial intelligence (AI) software market revenue worldwide from 2018 to 2025



Artificial Intelligence Employment & Salary Trends



The Artificial Intelligence market is expected to grow by USD 190.61 billion by 2025. Since the adoption of Artificial Intelligence is rapidly increasing in various applications, it is projected to grow at the highest CAGR during the forecast period. Big Tech companies like IBM, Google, Facebook, Microsoft, Amazon, etc., are Readily hiring experts Proficient in AI.



The Future is Artificial Intelligence

Artificial intelligence (AI) has created new opportunities in recent years. Industries are being affected, making previously unthinkable activities like space travel and melanoma diagnosis viable. As a result, there has also been a continuous rise in AI careers. LinkedIn said AI professionals would be among the 'jobs on the rise' in 2023 and beyond.

AI is set to be the key source of transformation, disruption, and competitive advantage in today's fast-changing economy. In this report, we've drawn on the findings to create our AI Impact Index, where we look at how quickly change is coming and where your business can expect the greatest return.

IndiaAI has a mission-centric approach that ensures a precise and cohesive strategy to bridge the gaps in the existing AI ecosystem viz-a-viz Compute infrastructure, Data, AI financing, Research and Innovation, targeted Skilling, and institutional capacity for Data to maximize the potential of AI to advance India's progress.

Generative AI is already proving a significant differentiator for the 5% of the population who work more than one job or have multiple earnings streams. A recent Morgan Stanley Research survey shows that multi-earners who use generative AI tools to enhance productivity or efficiency make \$8.50 per hour, or 21%, more than those who don't.

NASSCOM[®]



Morgan Stanley



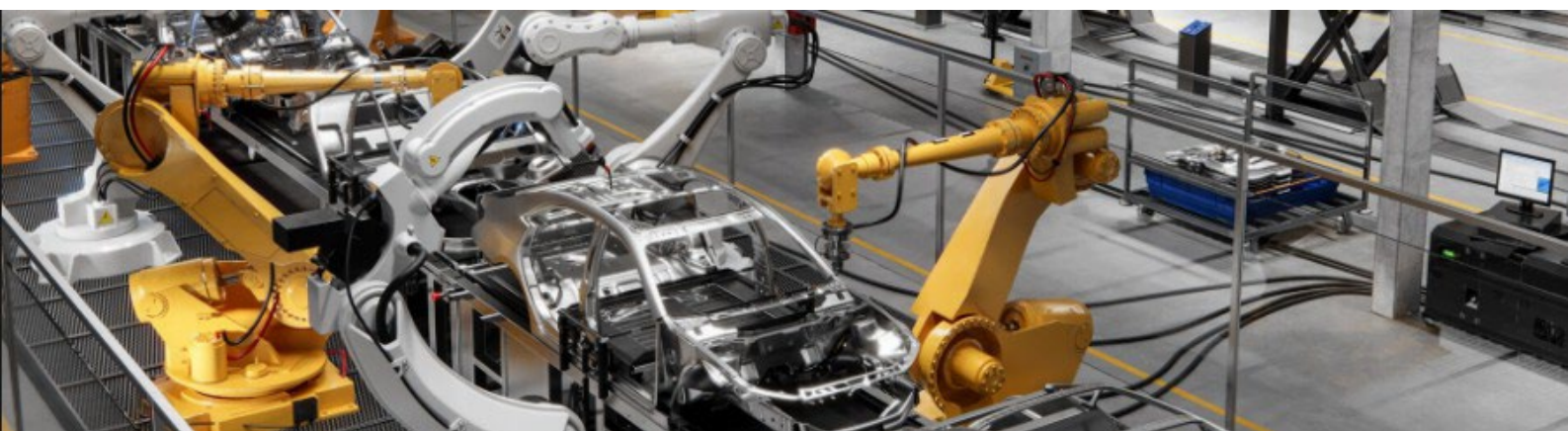
CONTENT AND CURRICULUM

This course is designed to be job-oriented for suitably skilling the participants for the role of AI/ML analysts, forecasting analysts, AI Product Developers, and AI Researchers, apart from being AI Entrepreneurs. Hence, the course will be practical heavy and will familiarize the participants with the development environment of the platforms providing end-to-end developer skilling. The course will be made more contextual by following up with Capstone projects designed after the latest protocol and application development.

The details of the course content and curriculum are provided below:

Course Objectives:

- **To Understand AI Fundamentals:** Provide students with a solid understanding of the foundational concepts, principles, and terminology in Artificial Intelligence.
- **To Develop Problem-Solving Skills:** Equip learners with the ability to apply AI techniques to address real-world challenges and enhance their problem-solving capabilities.
- **To Foster Ethical Awareness:** Introduce the ethical considerations and responsible use of AI, enabling students to make ethical decisions in AI applications.
- **To Prepare for AI-Related Careers:** Prepare students for careers in AI by providing the requisite knowledge and skills in AI development and implementation.
- **To Promote Innovation and Creativity:** Encourage creative thinking and innovation in developing AI-driven solutions and applications.



Prerequisites

1. Students of Autonomous and Pradhan Mantri Centre of Excellence Colleges of Higher Education MP.
2. Basic understanding of mathematics would be preferable.
3. Familiarity with at least one programming language is beneficial but not mandatory.
4. Access to a computer with internet connectivity for programming assignments and project work.

Learning Outcomes

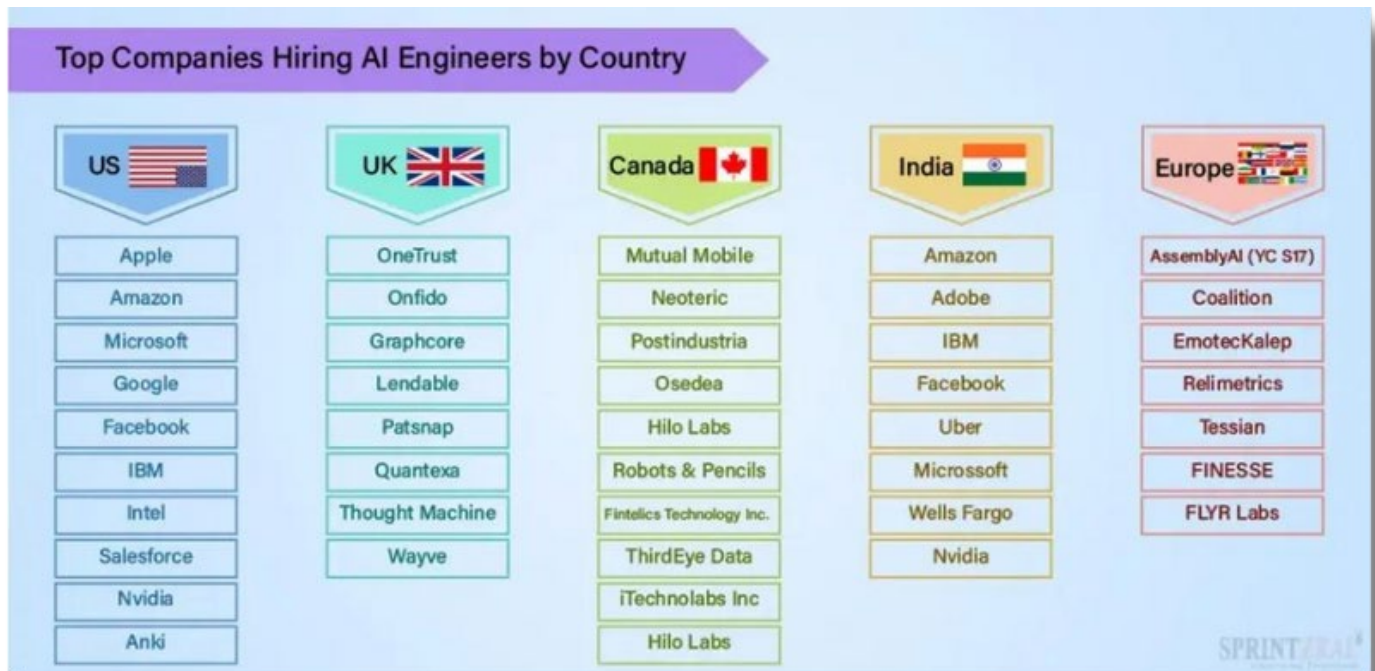
Upon completing this course, students should be able to:

- ◆ Define key AI concepts and terminology, such as machine learning, neural networks, and data mining.
- ◆ Apply AI techniques to analyze and solve real-world problems. Evaluate the ethical implications of AI applications and make informed, responsible decisions.
- ◆ Demonstrate proficiency in AI programming languages and tools. Develop AI-driven solutions for various applications.



MODULES	TOPICS COVERED	Duration (Hours)
Module 1		
Introduction to AI	What is AI – Definition and Concepts	
	Why AI – Importance	5
	Historical Perspective of AI	
	AI in the Modern World	
Module 2		
Machine Learning Fundamentals	What is Machine Learning	
	Supervised Learning	10
	Unsupervised Learning	
	Reinforcement Learning	
Module 3		
Data Analysis of AI	Data Analysis vs Data Analytics vs Data Science	
	Data Preprocessing	10
	Feature Engineering	
	Model Evaluation	
Module 4		
Neural Networks and Deep Learning	Defining Neural Networks and Deep Learning	
	Perceptrons	10
	Feedforward Neural Networks	
	Convolutional Neural Networks	
	Recurrent Neural Networks	
Module 5		
AI – Ethical Considerations	Why is Ethics important in AI	
	Bias and Fairness	
	Privacy and Security	5
	Accountability and Transparency	

Module 6		
AI Programming Languages and Tools	Python for AI	10
	Popular AI Libraries (e.g. Tensorflow, PyTorch, etc.)	
Module 7		
Capstone Project	To be decided by the instructor	20
Presentations and Demo	Students will present their final output	20



Source: Sprint Zeal



ABOUT FITT – IIT DELHI

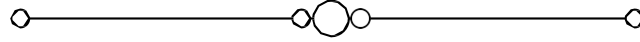
Foundation for Innovation and Technology Transfer (FITT) at IIT Delhi has been the vanguard of knowledge transfer activities from academia since its inception in 1992. This techno-commercial organization from academia is counted among the successful such organizations. FITT provides superior program management services and is steadily increasing its operational landscape. The varied roles of FITT can be seen in enabling innovations and technopreneurship, business partnerships, technology development, consultancy, collaborative R&D, technology commercialization, development programs, corporate memberships etc. These roles are necessitated by the key agenda of the Foundation to showcase the Institute's "intellectual ware" to industry, and thereby unlock its knowledge base and inculcate industrial relevance in teaching and research at IIT Delhi.

IIT Delhi is India's eminent academic and research institution. It co-develops a range of training programs for college-level to working professionals and also on emerging areas like Blockchain, AI/ML, IoT, AR/VR & Cybersecurity. The CoE in IIT Delhi has been set up to conduct deep research and product development in these areas, particularly for critical infrastructures like Waterways, Smart Cities, Railways and Energy.



ENROLLMENT PROCESS

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