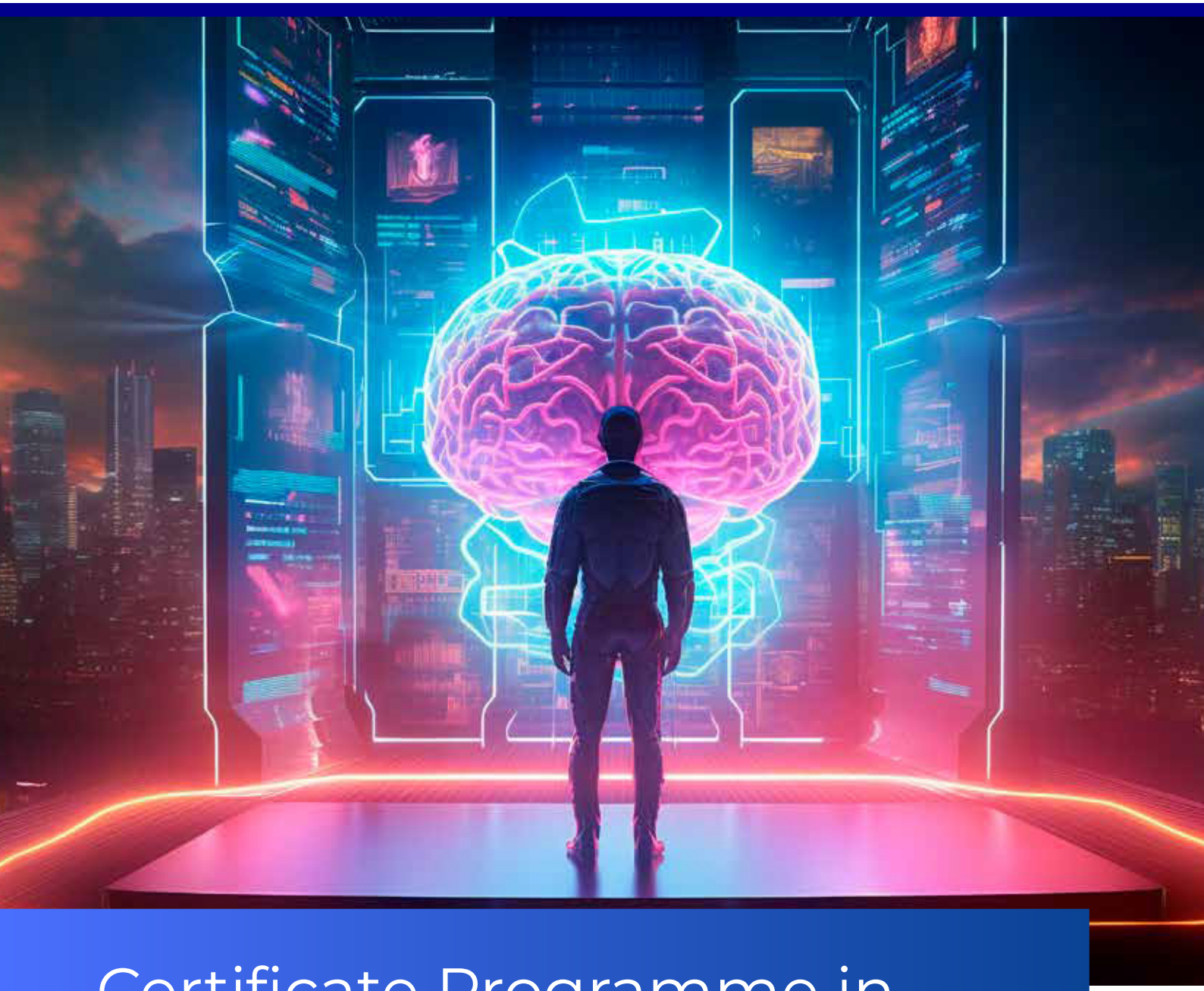
भारतीय प्रौद्योगिकी संस्थान दिल्ली
Indian Institute of Technology Delhi

1 in India, in the QS World University Rankings: Southern Asia 2026

2 in NIRF Ranking 2025 (Engineering)



Certificate Programme in **Generative AI**

Batch 03

6 Months | Starts 25th July 2026 | Live Online Lectures

Programme offered by Continuing Education Programme (CEP), IIT Delhi

The Future of Work: Upskilling for a Generative AI-Driven World

As Generative AI transforms industries, the demand for skilled professionals grows exponentially. By 2025, AI is projected to contribute $15.7 trillion to the global economy *(Source: PwC)*. However, 85% of jobs in 2030 haven't been created yet, emphasizing the need for continuous upskilling *(Source: WEF)*.

The Skills Gap

75%
of companies face AI skills shortages

(Source: Gartner)

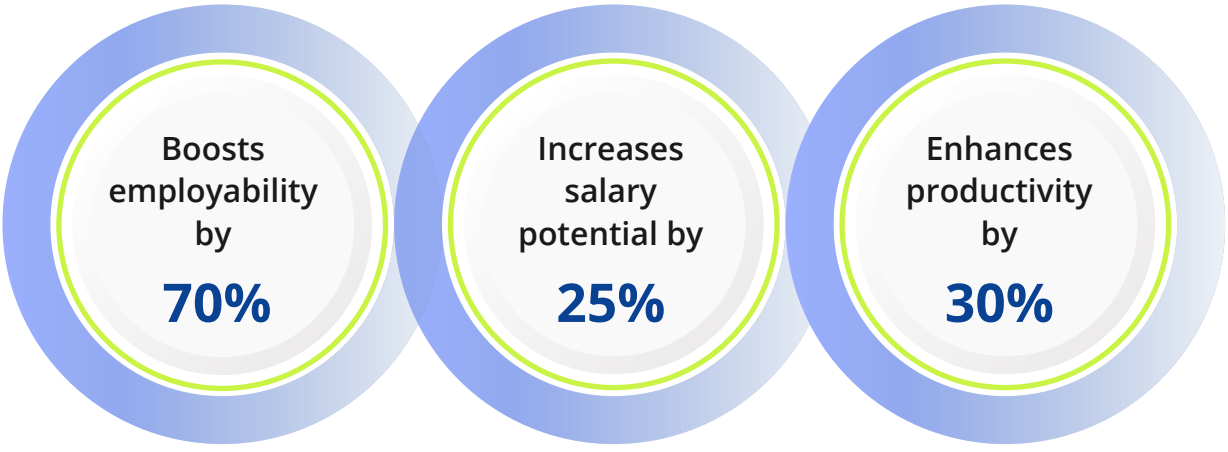
90%
of employees lack essential AI skills

(Source: IBM)

50%
of professionals require retraining by 2025

(Source: McKinsey)

Upskilling Benefits



(Source: LinkedIn) *(Source: Glassdoor)* *(Source: Accenture)*

Generative AI Applications

Healthcare

Personalised medicine & disease diagnosis

Finance

Predictive analytics & risk management

Education

Customised learning & AI-powered tutoring

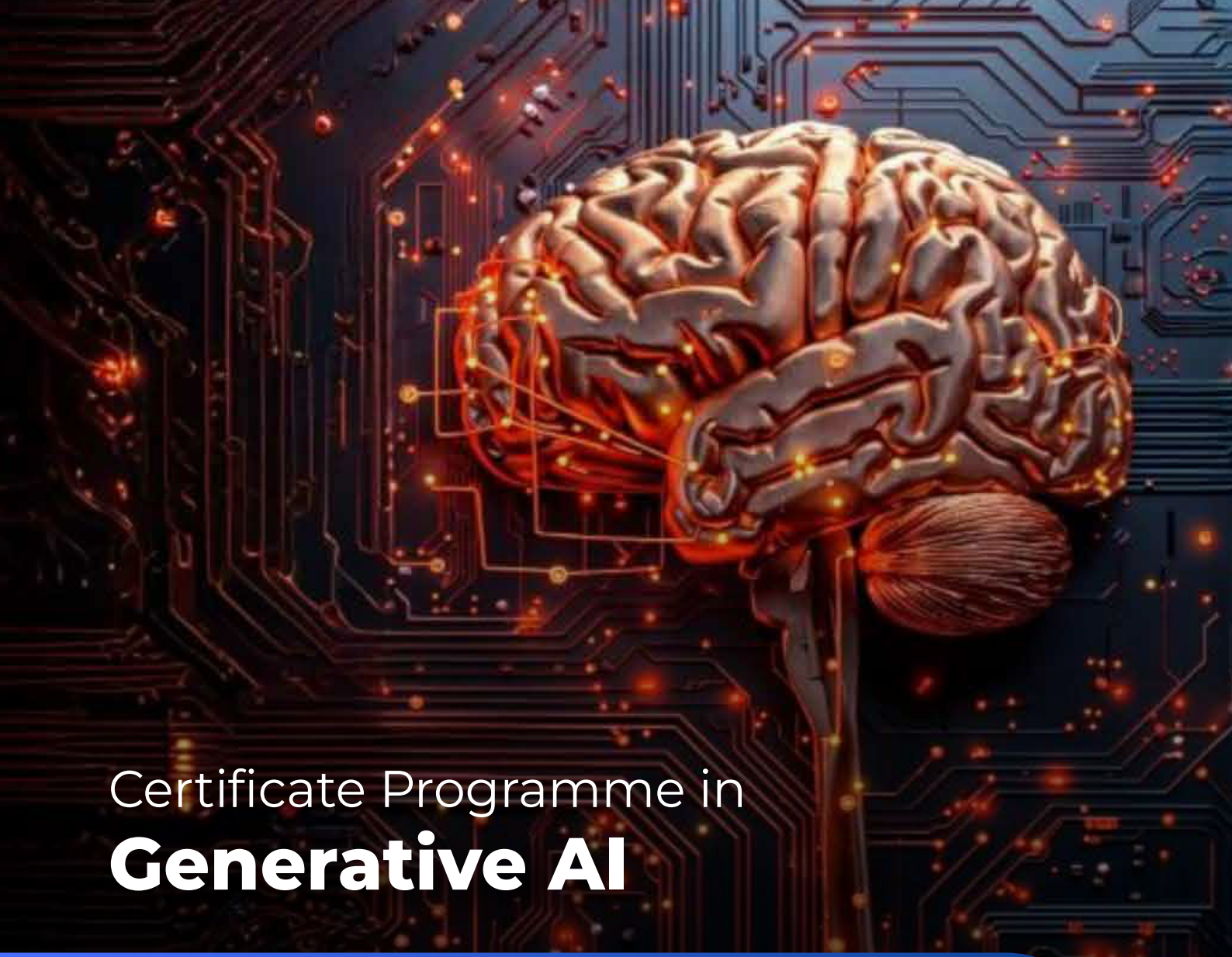
Upskilling Pathways

AI foundations & programming

Data science & machine learning

Business strategy & AI implementation

Invest in your future. Stay ahead of the curve with AI upskilling. Unlock new opportunities, enhance your career, and drive business success.



Certificate Programme in **Generative AI**

Programme Overview

CEP, IIT Delhi's Certificate Programme in Generative AI offers a deep dive into advanced AI techniques, focusing on Large Language Models (LLMs) like GPT, BERT, and T5. Starting with foundational concepts like Linear Algebra and progressing to Machine Learning, participants will gain hands-on experience with model optimisation techniques such as fine-tuning and PEFT. The programme also covers cutting-edge topics like Reinforcement Learning with Human Feedback (RLHF) and Vision-Language Models (VLMs). Participants will be equipped to apply LLMs in real-world scenarios and ensure responsible AI use.

Programme Highlights

- 6-month, online programme for working professionals
- 60 hours of online live sessions by IIT Delhi faculty and industry experts
- Peer-learning and networking opportunities
- Practical learning with tutorials and latest tools
- Advanced curriculum for cutting-edge AI expertise
- E-Certificate from CEP, IIT Delhi

Who Should Attend?

- AI/ML Professionals looking to enhance their expertise in Generative AI and Large Language Models (LLMs).
- Data Scientists and Engineers interested in advancing their skills in natural language processing and deep learning frameworks.
- Tech Leaders and Managers aiming to integrate AI-driven innovations into their organizations.
- Product Managers and Innovators focusing on AI-powered solutions for product development.
- Academics and Researchers eager to explore cutting-edge AI techniques and their practical applications.
- Software Developers keen to learn about NLP, AI optimisation, and model fine-tuning.
- AI Enthusiasts and professionals seeking to transition into the AI/ML space with hands-on experience in advanced AI methodologies.

Learning Outcomes

Master text processing tools like NLTK, spaCy, and Pandas for efficient data handling and preprocessing.

Explore key Transformer Models such as GPT, BERT, and T5 for various NLP tasks.

Learn scaling laws to optimise LLM size, cost, and performance effectively.

Fine-tune LLMs in low-resource environments using advanced optimisation techniques.

Enhance LLM task performance and align them with human values through Reinforcement Learning with Human Feedback (RLHF).

Improve LLM reasoning and integrate external tools to tackle complex real-world challenges.

Mitigate bias, toxicity, and hallucinations in LLMs for safe and responsible AI deployment.

Gain expertise in cutting-edge LLM and Generative AI technologies for diverse applications.

Programme Curriculum

Module 1: Mathematical Foundations for ML

Linear Algebra: Vector and Matrix dot product, Matrix Vector Multiplication, Matrix Decomposition (SVD)

Learning Outcomes

Building mathematical foundations, an essential prerequisite for the course

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Probability Theory: Random Variables, Bayes Theorem, Conditional Probability

Learning Outcomes

Understanding the fundamentals of Probability Theory in Machine Learning

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Optimisation: Gradient Descent, First/Second Order Condition, Convex Optimization, KL-Divergence

Learning Outcomes

Concepts of Optimisation and its application in Machine Learning algorithms

Module 2: Machine Learning

Introduction to ML: Linear Regression, Logistic Regression

Learning Outcomes

Fundamental ML concepts, understanding regression methods

Optimisation Continued, SVM, Decision Tree, Ensemble Methods

Learning Outcomes

Learning supervised ML methods

Unsupervised Learning: Clustering, Dimensionality Reduction (PCA, LDA, t-SNE)

Learning Outcomes

Introduction to unsupervised methods

Artificial Neural Networks: Perceptron, Multilayer Network, Backpropagation

Learning Outcomes

Understanding the basics of neural networks and their training

*The list of tools and topics mentioned is indicative and may be modified as per programme requirements and at the discretion of the Programme Coordinator.

Programme Curriculum

Module 3: Natural Language Processing (NLP)

Basic Text Processing (NLTK, spaCy), Morphology, Stemming, Edit Distance

Learning Outcomes

Use of NLP tools for text processing

Language Modelling: N-gram Modelling, Smoothing Techniques, Perplexity

Learning Outcomes

Learning different language modelling approaches

POS Tagging: Sequential Learning, HMM, Viterbi Algorithm

Learning Outcomes

Introduction to sequence learning for NLP

Parsing: Constituency vs Dependency Parsing, CKY Algorithm, CFG, PCFG

Learning Outcomes

Learning techniques for syntactic analysis in NLP

Text Classification: Naive Bayes Algorithm, Lexical Similarity (Word Embeddings, TF-IDF, Word2Vec, GloVe)

Learning Outcomes

Understanding classification in NLP using traditional and modern approaches

Module 4: Generative AI for Text

Neural Language Models (CNN, RNN, LSTM, GRU, Seq2Seq)

Learning Outcomes

Introduction to neural models and attention mechanisms for text generation

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Attention Mechanism: Self-Attention, Transformer Architecture

Learning Outcomes

Understanding self-attention and Transformer architectures for language models

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Pre-trained Models: BERT, GPT, T5

Learning Outcomes

Architecture and training of different pre-trained large language models

*The list of tools and topics mentioned is indicative and may be modified as per programme requirements and at the discretion of the Programme Coordinator.

Programme Curriculum

Fine-tuning Strategies: Task-specific Fine-tuning, Instruction Fine-tuning, Preference Tuning (RLHF, PPO)

Learning Outcomes

Learning various fine-tuning approaches to improve model performance

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Prompting Strategies: In-context Learning, Chain of Thought, Knowledge Probing, Text Generation

Learning Outcomes

Techniques for optimising LLM performance through effective prompting

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Augmented LLMs: Retrieval-Augmented Generation (RAG), Tool Augmented LLM

Learning Outcomes

Leveraging RAG and tool augmentation to improve LLM efficiency and reasoning capabilities

Module 5: Generative AI for Vision

Vision Language Models (VLM)

Learning Outcomes

Understanding how VLMs enable combined text and image generation for multimodal applications

Module 6: Responsible AI

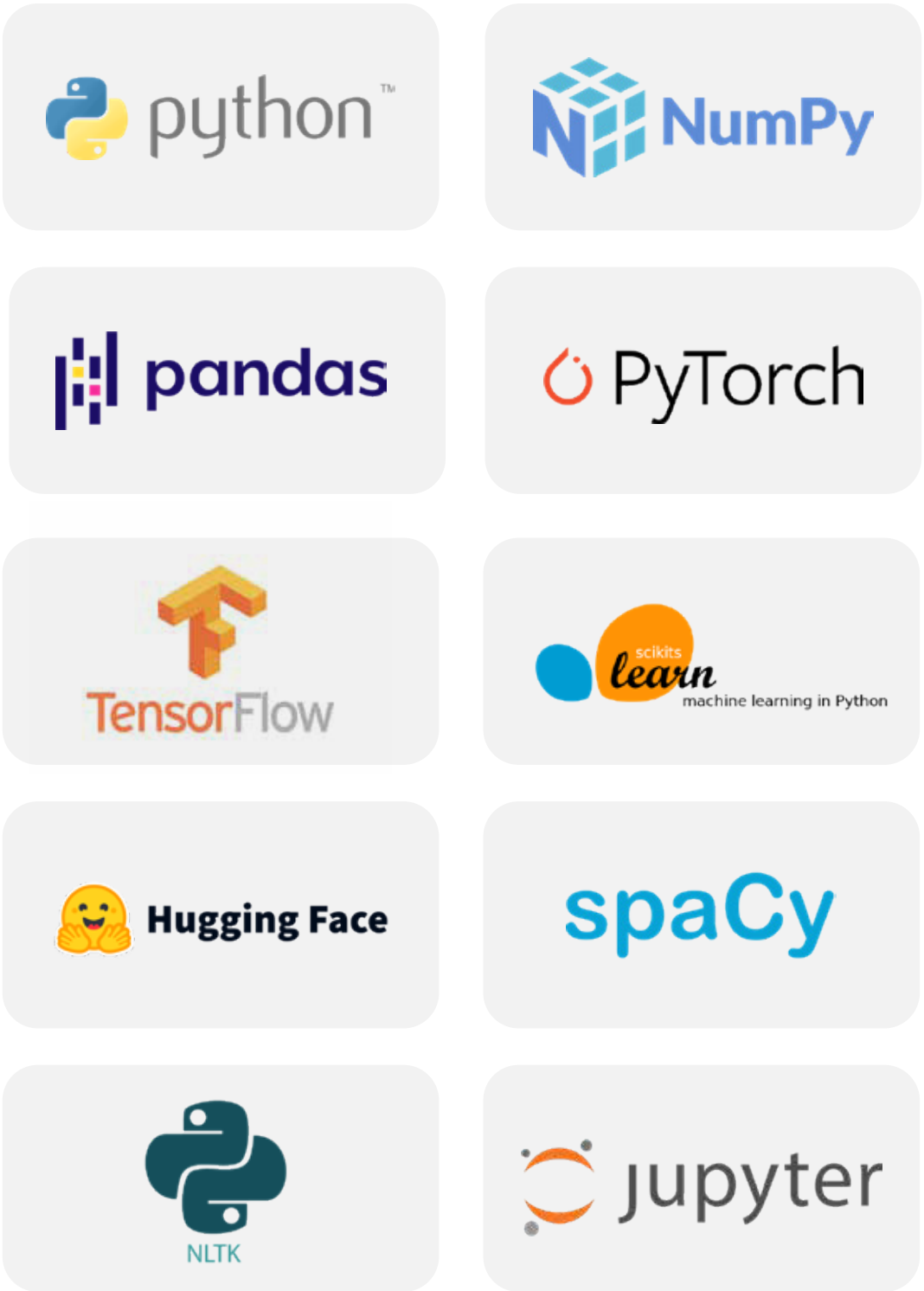
Misinformation, Bias, Toxicity, Security and Fairness

Learning Outcomes

Learning strategies to mitigate bias, toxicity, and hallucinations in AI outputs

*The list of tools and topics mentioned is indicative and may be modified as per programme requirements and at the discretion of the Programme Coordinator.

Tools Covered



*The list of tools and topics mentioned is indicative and may be modified as per programme requirements and at the discretion of the Programme Coordinator.

Tutorials

- Compute matrix operations using NumPy.
- Preprocess a text dataset and generate embeddings using spaCy or Hugging Face.
- Build a simple neural network using TensorFlow/PyTorch.
- Train the model on basic NLP tasks like text classification problem.
- Implement a simplified self-attention mechanism.
- Use a pre-trained transformer models for various NLP tasks like translation or summarisation.
- Fine-tune a GPT or BERT model on a custom dataset for various NLP problems.
- Use Hugging Face's pre-trained transformer model to generate text.
- Apply PEFT to a large model for fine-tuning on a small dataset.
- Apply quantization and pruning on a pre-trained model to optimise for lower resource usage.
- Implement a RAG model using Hugging Face transformers and document retrieval from a custom corpus.
- Use Hugging Face multilingual models for problems in cross-lingual scenarios.

Assignments/ Projects

Implement a fully connected neural network using PyTorch or TensorFlow for some task. Train the model and visualise its accuracy and loss over epochs.

Fine-tune a pre-trained transformer model on a text classification task. Evaluate the model on a test set and report its accuracy, precision, and recall.

Implement a simplified version of the transformer architecture focusing on self-attention and positional encoding. Train the model on a small dataset for translation or another task. Compare the results with a pre-trained transformer model.

Implement PEFT on a large LLM for a specific task. Compare the training time and resource usage between standard fine-tuning and PEFT.

Create a simple reward model using human-labelled data for a text generation task (e.g., summarisation or sentiment correction). Implement a reinforcement learning loop to improve the LLM's responses based on the reward model.

Compare the performance of different open source Large Language Models (LLMs) on reasoning tasks using various prompting techniques—zero-shot, few-shot, chain-of-thought, self consistency prompting.

*Disclaimer - The list of assignments mentioned is indicative and may be modified as per the requirements and discretion of the Programme Coordinator.

Career Support

Note: Career support facility is offered by TimesPro. IIT Delhi is not responsible for the same.

 Personal Branding	• Introduction to networking platforms • Profile creation on professional networking platforms like LinkedIn, Lunchclub, etc. • LinkedIn Profile Review • Insights on creating a personal brand on LinkedIn • Insights on how to increase post engagement on LinkedIn • Active networking
 Business Communication	• Role and importance of effective communication as a leader • The art of providing constructive feedback that drives team success • Importance of non-verbal communication • Key elements of executive body language
 Job Search Strategy	**Resume Creation** • Importance of creating ATS-friendly executive resume • Executive resume sections and structure • Tailoring resumes for different roles and industries • Write a powerful resume that stands out from the competition • Resume Review - Peer to peer review and Q&A
 Interview Preparation	**Pre-interview Etiquettes** • Learn about top-down approach for interviews • Pre-interview tips and tricks **In-interview Etiquettes** • Creating a self-elevator pitch • Understanding interviewer mindset • Interview grooming sessions and tips and tricks for interview **Post-interview Etiquettes** • Reflecting on interview experience and incorporating the feedback • Relationship building with the recruiter • Following up on job application

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A Glance at our Batch 01 Learners

Work Experience

15+ Years
48%

10-15 Years
35%

0-5 Years
8%

5-10 Years
9%

Industries

- Information Technology & Software Services
- Food & Beverage
- Financial Services / Banking
- Education
- Government / Public Sector / Utilities
- Manufacturing / Industrial
- Consulting

Job roles you may Explore

AI Research Scientist

Responsibilities: Conducting cutting-edge research in AI, developing new models (e.g., transformers, neural networks), and exploring novel approaches to improve AI capabilities.

Machine Learning Engineer

Responsibilities: Designing, building, and deploying machine learning models, with a focus on generative models for tasks such as text generation, image synthesis, and video generation.

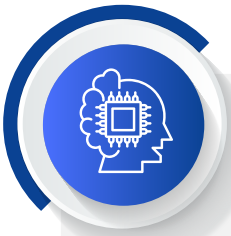
Data Scientist with Generative AI Expertise

Responsibilities: Applying machine learning models to generate data-driven insights and building models that generate synthetic data, automate content creation, or perform advanced data augmentation.

NLP Engineer/Scientist

Responsibilities: Specialising in Natural Language Processing, particularly in building systems for language generation, sentiment analysis, machine translation, and conversational AI (chatbots, virtual assistants).

Job roles you may Explore



Generative AI Specialist

Responsibilities: Building generative models to create synthetic content like text, images, music, or 3D designs. Working on AI models such as GPT, DALL-E, or any AI that generates new data from existing data.

Conversational AI Developer

Responsibilities: Building advanced conversational agents, chatbots, and virtual assistants using generative AI models that can understand and generate human-like responses.

Autonomous Systems Engineer

Responsibilities: Building AI systems that can generate actions autonomously in areas such as robotics, self-driving cars, or automated customer support.

Vision Engineer (Generative AI for Vision)

Responsibilities: Developing AI models for image and video generation, synthesis, or enhancement, using generative models for computer vision tasks.

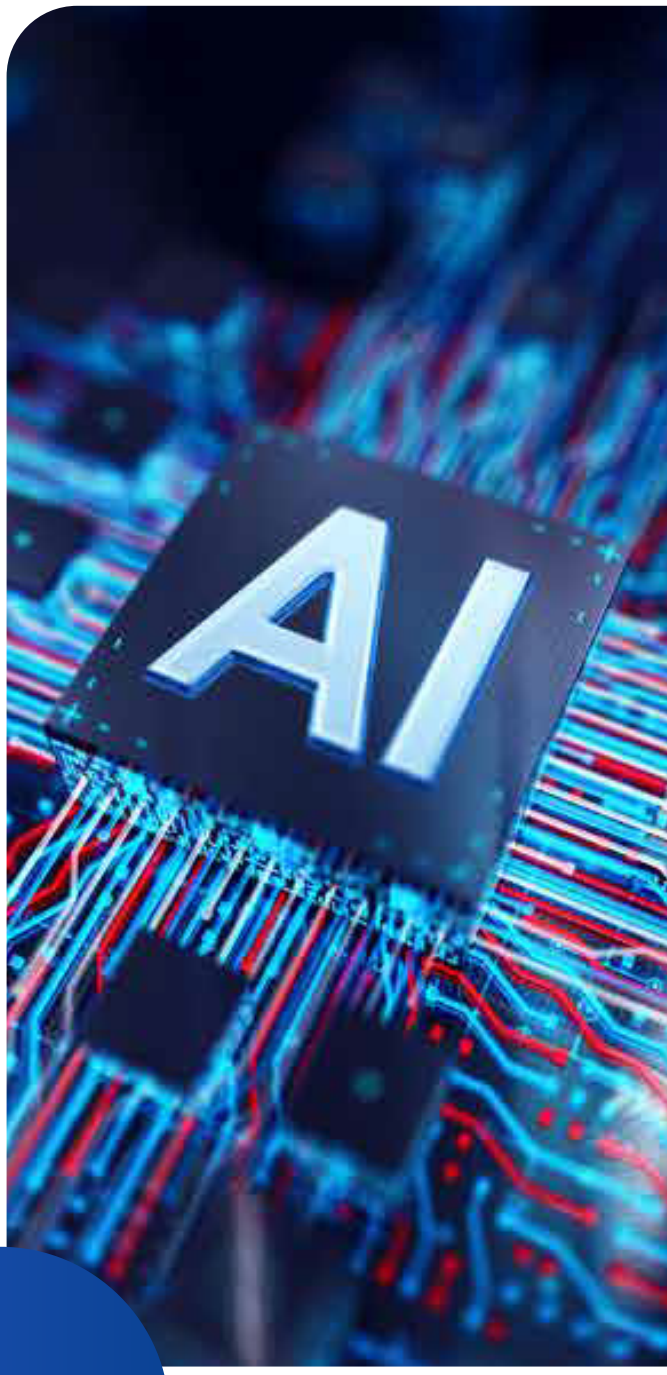
Programme Details

Eligibility

- Graduates or Post-Graduates in Computer Science, Electronics & Communications Engineering, Electrical Engineering or Information Technology or, other Graduates with minimum 2 years (24 months) of prior experience in software coding or computer programming.

Admission Criteria

Selection based on application review



Campus Immersion

One-day campus immersion for interaction between faculty and learners at IIT Delhi.

Disclaimer - Travel and accommodation cost will be borne by the learners. IIT Delhi will not be responsible for the same.

Duration

6 Months

- 60 Hours Live Online Sessions
- 10 Hours Capstone Project
- 12 Hours Tutorials
- 60 Hours Self-paced
- 6 Hours Campus Immersion (Optional)

Programme Delivery

Live Online Sessions delivered Direct to Device (D2D)

Class Schedule

Every Sundays: 9AM to 12PM (Subject to Change)

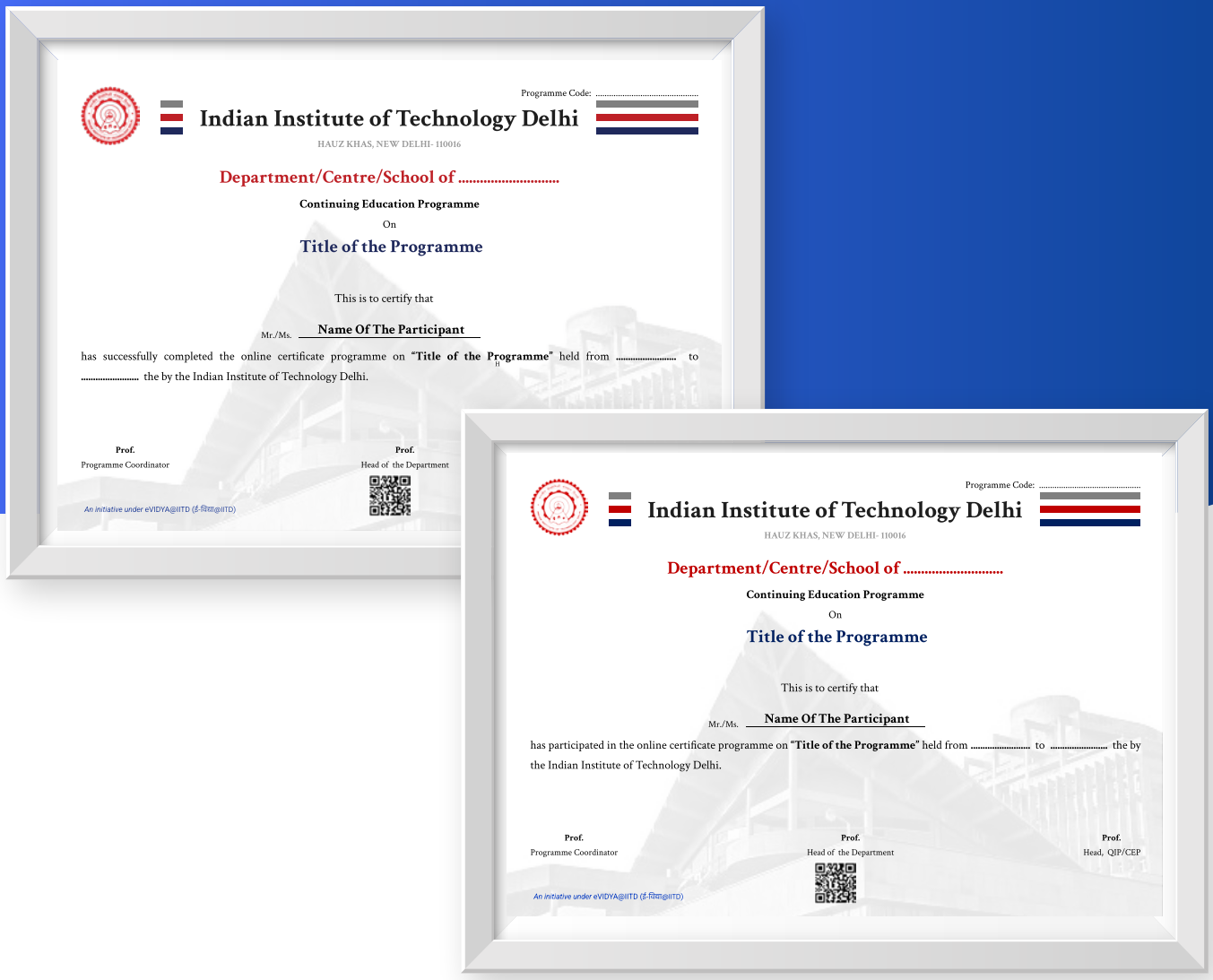
Evaluation

- 60% - End of programme MCQ based exam
- 30% - Assignments & project
- 10% - Attendance

Programme offered by Continuing Education Programme (CEP), IIT Delhi

Certification*

- Criteria to be applied for the Successful Completion Certificate - Candidates who score at least 60% marks overall and have a minimum attendance of 80%
- Criteria to be applied for the Participation Certificate: Candidates who score less than 60% marks overall and have a minimum attendance of 80%
- The organising department of this programme is the Department of Electrical Engineering, IIT Delhi.



**Only e-certificates will be issued by CEP, IIT Delhi for this programme*

Campus immersion

Batch 01












Disclaimer - Travel and accommodation cost will be borne by the learners. IIT Delhi will not be responsible for the same.

Programme Coordinator

PROF. TANMOY CHAKRABORTY

Associate Professor Department of Electrical Engineering
Associate Faculty Member Yardi School of Artificial Intelligence
Indian Institute of Technology Delhi

Prof. Tanmoy Chakraborty is an Associate Professor of Electrical Engineering and the Yardi School of AI at the Indian Institute of Technology (IIT) Delhi. He leads the Laboratory for Computational Social Systems (LCS2), a research group specializing in Natural Language Processing (NLP) and Computational Social Science. His current research primarily focuses on empowering small language models for improved reasoning, grounding, and prompting and applying them specifically to two applications -- mental health counselling and Cyber-informatics. Tanmoy obtained his PhD in 2015 from IIT Kharagpur as a Google PhD scholar. Subsequently, he worked as a postdoctoral researcher at the University of Maryland, College Park, USA.. Tanmoy has received numerous awards, including the Ramanujan Fellowship, the PAKDD Early Career Award, ACL'23 Outstanding Paper Award, IJCAI'23 AI for Good Award, and several faculty awards/gifts from industries like Facebook, Micorosft, Google, LinkedIn, JP Morgan, and Adobe. He has authored two textbooks – "Social Network Analysis" and “Introduction to Large Language Models.”

More details may be found at tanmoychak.com.

Programme Faculty

PROF. SRIPARNA SAHA

Associate Professor
Department of Computer Science and Engineering
at the Indian Institute of Technology (IIT) Patna

Prof. Sriparna Saha is an Associate Professor in the Department of Computer Science and Engineering at the Indian Institute of Technology (IIT) Patna. She holds M.Tech and Ph.D. degrees in Computer Science from the Indian Statistical Institute, Kolkata, obtained in 2005 and 2011, respectively. Her research interests encompass Artificial Intelligence, Machine Learning, Natural Language Processing, Multimodal Information Processing, Information Extraction, Text Mining, Bioinformatics, and Multiobjective Optimization. Dr. Saha has authored or co-authored over 400 publications and has also written a book published by Springer. She is a Senior Member of IEEE and a Fellow of IETE. Her contributions to the field have been recognized with several awards, including the Lt Rashi Roy Memorial Gold Medal from the Indian Statistical Institute for outstanding performance in M.Tech (Computer Science), the Google India Women in Engineering Award (2008), the NASI Young Scientist Platinum Jubilee Award (2016), the BIRD Award (2016), the IEI Young Engineers' Award (2016), the SERB Women in Excellence Award (2018), and the SERB Early Career Research Award (2018). Prof. Saha's h-index is 38, with a total citation count of 7,546, according to Google Scholar.

Programme Faculty

PROF. RACHIT CHHAYA

Assistant Professor
Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT) Gandhinagar

Prof. Rachit Chhaya is currently an Assistant Professor at Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT), Gandhinagar. He completed his Ph.D. in Computer Science and Engineering at IIT Gandhinagar in 2022. His research focuses on scalable algorithms for machine learning problems with provable guarantees, specifically by creating small summaries of data called 'coresets'. He has worked on machine learning problems involving regularization and/or fairness constraints. He has published in prestigious venues like ICML, AAAI, AISTATS and TMLR. Currently he teaches courses like machine learning and approximation algorithms. He has also been involved in various training programs on AI/ML.

Programme Faculty

PROF. RAHUL MISHRA

Assistant Professor
IIIT Hyderabad's Language Technology
Research Centre (LTRC)

Prof. Rahul Mishra is an Assistant Professor at IIIT Hyderabad's Language Technology Research Centre (LTRC), where his research focuses on Controllable Text Summarization, Misinformation Detection, Model Explainability, Graph Representation Learning, and Natural Language Generation. Previously, he served as a senior postdoctoral researcher at the University of Geneva, Switzerland, specializing in biomedical NLP. Prior to that, as a Senior Staff Engineer/Researcher, he contributed to research projects at Samsung Research Lab in Bangalore, optimizing and benchmarking large language models on process in memory (PIM) enabled GPUs. He holds a PhD from the University of Stavanger, Norway and an M.Tech from IIIT Delhi. During his doctoral studies, he also worked as a visiting researcher at the Computer Science Department of ETH, Zurich, Switzerland and University of Hannover, Germany. Before pursuing his PhD, he worked as an NLP data scientist in the automatic vehicle diagnostic department at KPIT Technologies, Pune, focusing on automatic fact extraction from car service manuals. Prior to that, he also held roles as a consultant researcher at Tata Research Development and Design Centre (TRDDC) and a research intern at IBM Research Bangalore.

Programme Fee

Particulars	Amount (₹)
Programme Fee	₹ 1,95,000
GST @18%	₹ 35,100
Total Fees	₹ 2,30,100

Note:

- All fees should be submitted in the IIT Delhi CEP account only, and the details will be shared post-selection.
- Easy EMI options available.
- Loan and EMI options are services offered by TimesPro. IIT Delhi is not responsible for the same.
- The receipt will be issued by the IIT Delhi CEP Account for your records, which can be downloaded from the CEP Portal.

Withdrawal and Refund:

- Candidates can withdraw within 15 days from the programme start date. A total of 80% of the total fee received will be refunded. However, the applicable tax amount paid will not be refunded on the paid amount.
- Candidates withdrawing after 15 days from the start of the programme session will not be eligible for any refund.
- If you wish to withdraw from the programme, you must email cepaccounts@admin.iitd.ac.in and icare@timespro.com, stating your intent to withdraw. The refund, if applicable, will be processed within 30 working days from the date of receiving the withdrawal request.

Instalment Schedule

Component	Date	Amount ₹*
Application fee**	To be paid at the time of Application	₹ 1,000
1st Installment	Within 4 days of offer rollout	₹ 51,000
2nd Installment	22nd August 2026	₹ 48,000
3rd Installment	22nd September 2026	₹ 48,000
4th Installment	22nd October 2026	₹ 48,000

Note:

- *GST@ 18% will be charged extra in addition to the fee.
- The application fee of ₹1,000 is non-refundable, non-transferable, and will not be adjusted against the total programme fee.

Programme Timelines

Application Closure Date	24th July 2026
Programme Start Date	25th July 2026
Programme End Date	February 2027

APPLY NOW

भारतीय प्रौद्योगिकी संस्थान दिल्ली
Indian Institute of Technology Delhi

The Indian Institute of Technology Delhi (IIT Delhi) is one of the 5 initial IITs established for training, research, and development in science, engineering, and technology in India. Established as the College of Engineering in 1961, the Institute was later declared an Institution of National Importance under the "Institutes of Technology (Amendment) Act, 1963" and was renamed as "Indian Institute of Technology Delhi". It was then accorded the status of a Deemed University with powers to decide its own academic policy, conduct its own examinations, and award its own degrees. Since its inception, over 48,000 students have graduated from IIT Delhi in various disciplines including Engineering, Physical Sciences, Management, and Humanities & Social Sciences.

For more details, please visit: www.iitd.ac.in

1st
in India, in the QS World University Rankings: Southern Asia 2026

2nd
in NIRF India Engineering Rankings 2025

Continuing Education Programme (CEP)

The statutory body for offering certificate programmes and issuing certificates.

Executive education is a vital need for companies to build a culture that promotes newer technologies and solutions and builds a workforce that stays abreast of the rapidly transforming needs in the technological, business, and regulatory landscape. Committed to the cause of making quality education accessible to all, IIT Delhi has launched Online Certificate Programmes under eVIDYA@IITD (ई-विद्या @IITD), enabling Virtual and Interactive learning for Driving Youth Advancement @IITD for Indian as well as international participants.

These outreach programmes offered by the Indian Institute of Technology Delhi (IIT Delhi) are designed to cater to the training and development needs of various organisations, industries, society, and individual participants at national and international levels with a vision to empower thousands of young learners by imparting high-quality Online Certificate Programmes in cutting-edge areas for their career advancement in different domains of engineering, technology, science, humanities, and management.

For more details, please visit: http://cepqip.iitd.ac.in

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For any feedback, please write to:
CEP, IIT Delhi at
contactcep@admin.iitd.ac.in

Online Certificate Programmes are offered by the Indian Institute of Technology Delhi under the aegis of Continuing Education Programme (CEP) so that the Institute can realise its vision of serving as a valuable resource for industry and society, and fulfil its mission to develop human potential to its fullest extent so that intellectually capable and imaginatively gifted leaders can emerge in a range of professions.

Programme offered by Continuing Education Programme (CEP), IIT Delhi