HINDUSTAN
INSTITUTE OF TECHNOLOGY & SCIENCE
(DEEMED TO BE UNIVERSITY)

AICTE TRAINING AND LEARNING (ATAL) ACADEMY
— SPONSORED —

SIX-DAYS ONLINE

FACULTY DEVELOPMENT PROGRAMME

ON

MATHEMATICAL FOUNDATIONS AND EMERGING TRENDS IN ARTIFICIAL INTELLIGENCE, DATA SCIENCE AND SCIENTIFIC MACHINE LEARNING

7th DECEMBER - 12th DECEMBER 2026

ORGANIZED BY

SCHOOL OF BASIC & APPLIED SCIENCES

DEPARTMENT OF MATHEMATICS

— IN ASSOCIATION WITH —

AICTE TRAINING AND LEARNING (ATAL) ACADEMY

ABOUT THE INSTITUTION

Established in 1985, Hindustan Institute of Technology and Science (HITS) has grown into a premier institution of higher education in Chennai, with over 20,000 students currently pursuing diverse programmes. The Institution is Accredited with an A+ grade by the National Assessment and Accreditation Council. Its engineering programmes are accredited by the National Board of Accreditation, while B. Tech. programmes are recognized by the Institution of Engineering and Technology (IET), UK, ensuring global standards and strong industry alignment. We have also featured in the top among Universities in NIRF Rankings. HITS is consistently ranked among leading global universities in frameworks such as Times Higher Education, QS Rankings, and CWTS Leiden Ranking. The University demonstrates excellence in research, sustainability, and societal impact through strong performances in SCImago and UI GreenMetric Rankings. It has secured several institutional honours, including the Digii 100 Award, DSCI Excellence Award, and two prestigious recognitions at G-SEC 2026 for promoting sports, placements, employability, and international collaboration. With over 150 MoUs across 42 countries and collaborations with reputed industries such as IBM, Airbus, Boeing, Volkswagen, and Royal Enfield, HITS fosters global exposure through exchange programmes, joint research, and academic partnerships. The campus features advanced infrastructure, including 11 research centres, skill development hubs, hangars, incubators, and sports facilities. The Institution is supported by a strong research ecosystem with funded projects from agencies like the Department of Science and Technology, Defence Research and Development Organisation, and Naval Research Board. With an alumni strength exceeding 1 lakh, holding key positions in reputed organisations worldwide, HITS continues to uphold the vision of its Founder-Chairman K. C. G. Verghese, “To Make Every Man a Success and No Man a Failure”, by shaping future-ready graduates.

ABOUT THE DEPARTMENT

The Department of Mathematics at Hindustan Institute of Technology & Science, established in 1985, is a vibrant academic and research hub offering innovative programmes such as B.Sc. Mathematics & Data Science, M.Sc. Mathematics (Integrated) and Ph.D. in Mathematics, integrating core mathematics with emerging areas like AI and data science. The department has a strong research profile with numerous high-quality publications, patents, and funded projects, alongside active international collaborations and expert lectures. It fosters holistic student development through clubs, Olympiads, industrial visits, and outreach initiatives across multiple states. Faculty members continuously upgrade their expertise through FDPs and NPTEL certifications, ensuring modern teaching practices. With notable achievements including prestigious research awards, funded fellowships, and consistent academic performance, the department stands out for its interdisciplinary approach, outcome-based education, global exposure, and commitment to developing analytical and data-driven professionals.

ABOUT THE FDP

Artificial Intelligence and Data Science are rapidly transforming scientific research, higher education, healthcare, engineering and industry. Mathematics provides the essential foundation for these emerging technologies through linear algebra, probability, statistics, calculus, optimization and mathematical modelling. This Six-Day AICTE–ATAL Faculty Development Programme brings together mathematical foundations, Machine Learning, Generative AI, Large Language Models, Scientific Machine Learning, Explainable AI, Biostatistics, Multimodal AI, Data Science and AI-driven mathematical research. The programme is designed to provide participants with a balanced combination of conceptual understanding, practical exposure, emerging technologies and research perspectives.

OBJECTIVE OF THE FDP

- Strengthen mathematical and statistical foundations for Artificial Intelligence, Data Science, Machine Learning and Scientific Machine Learning.
- Develop practical skills in emerging AI technologies, including Generative AI, Large Language Models, Explainable AI, Multimodal AI and AI agents.
- Provide hands-on exposure to AI-driven mathematical modelling, optimization, Scientific Machine Learning and Physics-Informed Neural Networks.
- Explore AI applications in Biostatistics, healthcare, education, engineering and other interdisciplinary domains, with emphasis on data-driven decision-making.
- Promote responsible AI-enabled interdisciplinary research by enabling participants to identify research gaps and develop mathematical and AI-based research frameworks.

KEY THEMES

MATHEMATICAL FOUNDATIONS	EMERGING AI TRENDS	SCIENTIFIC MACHINE LEARNING	RESEARCH & APPLICATIONS	RESEARCH IMPACT
Strengthen core mathematics & statistics for AI, ML & DS	Explore Generative AI, LLMs, Explainable AI, Multimodal AI & more	Mathematical modelling, PINNs, SHAP, LIME & AI-driven scientific computing	Biostatistics, healthcare, engineering, decision support systems & beyond	Identify research gaps & develop AI-driven research frameworks

OUTCOME OF THE FDP

At the end of the FDP, participants will be able to:

- Apply mathematical, statistical and data science techniques to formulate, analyse and solve AI-driven problems.
- Utilize Generative AI, Large Language Models and emerging AI tools for mathematical problem-solving, programming, teaching and research.
- Implement introductory Scientific Machine Learning and Explainable AI approaches, including PINNs, AI-based modelling, SHAP and LIME.
- Explore AI applications in biostatistics, healthcare analytics, multimodal AI, RAG, optimization and intelligent decision-support systems.
- Identify interdisciplinary research gaps and develop AI-driven research frameworks integrating the research problem, mathematical model, dataset, AI methodology, validation, explainability and research contribution.

ESTEEMED SPEAKERS

DAY 1: Inaugural Session: 6:00 PM – 6:30 PM

DURATION	MODE	TARGET PARTICIPANTS	REGISTRATION
6 Days	Online	Faculty Members, Research Scholars, Industry Participants, PG Students, etc.	No Registration Fee. E-Certificate will be provided to eligible participants.

DAY 1 • SESSION 1 — NATIONAL

Mathematical Foundations of Modern AI and Data Science

Dr. Neelesh Shankar Upadhye

Professor, Department of Mathematics, IIT Madras, Chennai



6:30–8:00 PM

DAY 1 • SESSION 2 — INDUSTRY

Statistical Learning and Optimization for Artificial Intelligence

Mr. Pickon Majumdar

Software Application Engineer (R&D and Projects), ELMAX Systems and Solutions, West Bengal



8:00–9:30 PM

DAY 2 • SESSION 3 — INDUSTRY | INTERNATIONAL

Generative AI and Large Language Models for Mathematics

Dr. Amalraj Antony

Senior BioStatistician, Alimentiv Inc., London, Ontario, Canada



6:00–7:30 PM

DAY 2 • SESSION 4 — INDUSTRY

Generative AI and Large Language Models: Mathematical and Computational Perspectives

Mr. Raju Siva A

Chief AI Officer, Medusind Healthcare Inc., AI and Automation, Chennai



7:30–9:00 PM

DAY 3 • SESSION 5 — INTERNATIONAL

Scientific Machine Learning and Mathematical Modelling

Dr. Mani Shankar,

Head R&D, Department of Mathematics, University of Technology and Applied Sciences, Ibri, Oman



6:00–7:30 PM

DAY 3 • SESSION 6 — NATIONAL

Scientific Machine Learning for Mathematical and Engineering Problems:

From Numerical Methods to Physics Informed Neural Networks

Dr. Hari Ponnamma Rani

Professor, Department of Mathematics, NIT Warangal, Telangana



7:30–9:00 PM

DAY 4 • SESSION 7 — INDUSTRY

Explainable Artificial Intelligence for Mathematical Interpretation of Black Box Models

Dr. Mehar Chand

Associate Professor; Founder and President, MathTech Thinking Foundation (MTTF); Founder & Director, Alinexora Tech Private Ltd., Punjab



6:00–7:30 PM

DAY 4 • SESSION 8 — INTERNATIONAL

Trustworthy, Responsible and Ethical AI

Dr. Sathish Kumar Gurupatham

Associate Professor, Kennesaw State University, Georgia, USA



7:30–9:00 PM

DAY 5 • SESSION 9 — INDUSTRY

Multimodal AI Embeddings and Retrieval-Augmented Generation

Mr. Dhruv Govil

Senior Data Scientist and Sr. AI Consultant; CEO and Founder, PINAKI IT CONSULTANT Pvt. Ltd., Uttar Pradesh



6:00–7:30 PM

DAY 5 • SESSION 10 — INDUSTRY

Advanced Data Science with Time-Series, Graph AI and AI Agents

Mr. Ganeshvel Manigandhi

Vice President Security, Compliance & Privacy Products, SISA INFORMATION SECURITY Pvt. Ltd., Bengaluru



7:30–9:00 PM

DAY 6 • SESSION 11 — NATIONAL

Artificial Intelligence for Optimization and Mathematical Modelling with Emerging Applications and Research Directions

Dr. P. Varalakshmi

Professor, Department of Information Science and Technology, Anna University, Chennai



2:00–3:30 PM

DAY 6 • SESSION 12 — INDUSTRY

Artificial Intelligence for Mathematical Discovery and Research

Mr. Basavaraj Goni

Project Manager, Delta Airlines, Bangalore, Karnataka



3:30–5:00 PM

DAY 6 • SESSION 13 — INDUSTRY

Research Hackathon and Future Research Directions

Mr. Biswajit Nayak

Director – Advance Analytics & Data Science, Grid Analytics India Pvt. Ltd., Delhi



5:00–6:30 PM

DAY 6 • SPECIAL SESSION

Drug Use Prevention and Early Intervention in Higher Education Institutions - A Concise Guide for Faculty Members

Dr. P. Jayanthi

Professor cum Principal – College of Nursing, HITS, Chennai



6:30–7:30 PM

Online Test & Feedback session: 7:30 PM–8:30 PM | Valedictory Session: 8:30 PM–9:00 PM

REGISTRATION

There is no Registration fee for the FDP and the registration can be done using the link provided. Eligible participants: Faculty members, research scholars, government employees, industry participants, host institution staff. Participants will be selected on first come first serve basis. Selected candidates will be intimated by E-mail. The certificates shall be issued to those participants who are registered on ATAL portal https://www.aicte.gov.in/atal and attend the programme with minimum 80% attendance and score minimum 70% marks in the test.

- Login using your credentials as participant.
- Click FDPs on the left side menu.
- Select FDP type as ATAL Online for December.
- Search for application ID: 1785171134
- Click the + symbol next to the application.
- Upload the NOC signed by the HOI.
- Click confirm to complete the registration.

Join WhatsApp group for further updates: https://shorturl.at/HstHZ

IMPORTANT DATES

Last Date of Registration:	25th November 2026
Intimation of Selection:	28th November 2026
Confirmation by the Participant(s):	2nd December 2026
FDP Date:	7th December-12th December 2026
Registration Link:	https://atalacademy.aicte.gov.in/signup (or) https://www.aicte-india.org/atal
NOC for Participants:	https://shorturl.at/9mfeP

CONTACT US

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ORGANIZING COMMITTEE

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Department Chair	Dr. G. Kavitha, Associate Professor & HoD Mathematics
Coordinator	Dr. G. Kavitha, Associate Professor & HoD Mathematics
Co-Coordinator	Dr. A. Edwin Raj, Associate Professor