

Course Title: AI & ML Innovations for a Sustainable Future

Venue: KIIT Deemed-to-be University, (Hybrid)

Principal Investigator: Prof. Sanjeev Manhas

Course Date: 30.06.2025-06.07.2025

Course Coordinator: Dr. Chinmay Chakraborty, KIIT-DU

| Time | Day 1 (30.06.2025) | Day 2 (01.07.2025) | Day 3 (02.07.2025) | Day 4 (03.07.2025) | Day 5 (04.07.2025) |
|------------------|---|---|--|--|--|
| 2:00pm to 4:00pm | <p>Inaugural & Lecture 1 AI for Health and Planet: Intelligent Systems in Sustainable Medical Practices (Theory) Prof. Tapan Gandhi, IIT Delhi</p> | <p>Lecture 3 Generative AI for intelligent transportation systems (Theory) Prof. Mahesh Kumar H. Kolekar, IIT Patna</p> <p>Lecture 4 Generative AI for smart healthcare (Theory) Prof. Somnath Dey, IIT Indore</p> | <p>Lecture 8 AI in Renewable Energy Forecasting and Optimization (Theory) Prof. Kumar Abhishek, NIT Patna</p> <p>Lecture 7 Graph Machine Learning (Theory) Prof. Swagatam Das, ISI Kolkata</p> | <p>Lecture 11 Bayesian and SVM with Python(Theory) Prof. Chandan Chakraborty, NITTR Kolkata</p> <p>Lecture 12 Geospatial Technology for Sustainable Development (Theory) Prof. Soumya Kanti Ghosh, IIT Kharagpur</p> | <p>Lecture 15 Blockchain-Enabled Federated Learning for Edge Networks (Theory) Dr. Om Jee Pandey, IIT BHU</p> <p>Lecture 16 Empowering Sustainability with Next-Gen Wireless Industrial Cyber-Physical Networks (Theory) Dr. Rajarshi Roy, IIT Kharagpur</p> |
| 4:00pm to 6:00pm | <p>Lecture 2 Supervised ML with Applications (Theory) Prof. Chandan Chakraborty, NITTR Kolkata</p> | <p>Lecture 5 Generative AI for sustainable society (Theory) Prof. Rajiv Mishra, IIT Patna</p> <p>Lab Session 3 Diffusion models for Image generation (GenAI) (Hands-on) Mr. Khurram Afroz, IIT Delhi</p> | <p>Lecture 9 Sustainable AI systems through the lens of Software Engineering (Theory) Prof. Karthik Vaidhyanathan, IIIT Hyderabad</p> <p>Lecture 10 Trustworthy Autonomy for Sustainable Software Development in the Age of LLMs (Theory) Prof. Abhishek K Singh, IIIT Hyderabad</p> | <p>Lecture 13 Lightweight Machine Learning for IoT (Theory) Prof. Hari Prabhat, IIT BHU</p> <p>Lecture 14 Hardware Accelerators for AI and ML (Theory) Prof. John Jose, IIT Guwahati</p> | <p>Lecture 17 AI/ML-based Adaptive Physical Layer Transceiver Systems (Theory) Prof. Sudhan Majhi, IISC</p> <p>Lecture 18 From Data to Impact: ML-Driven Solutions for a Healthier and Sustainable Future (Theory) Dr. Chinmay Chakraborty, KIIT</p> |
| 6:00pm to 8:00pm | <p>Lab Session 1 Sustainable Intelligence: Exploring AI & ML for a Greener Tomorrow (Hands-on) Dr. Rik Das, PwC India</p> <p>Lab Session 2 Precision Agriculture using ML (Hands-on) Mr. Biswajit Tripathi, Infosys</p> | <p>Lecture 6 Intelligent Measurement Systems: Leveraging Machine Learning for Enhanced Accuracy & Sustainable Resource Management (Theory) Prof. Sivaji Chakravorti, INAE</p> <p>Lab Session 4 Gesture recognition using Transformers (Hands-on) Mr. Khurram Afroz, IIT Delhi</p> | <p>Lab Session 5 Generative AI for Sustainable Communication: Crafting Narratives and Visuals for Environmental Awareness (Hands-on) Mr. Samantak Panda, Tuteck, UK</p> | <p>Lab Session 6 Getting Started with Deep Learning Accelerator Design on FPGA using MATLAB and Vivado (Hands-on) Dr. Indranil Hatai, Siemens</p> | <p>Lab Session 7 Application-Driven Deployment of Deep Learning Models on FPGA using MATLAB and Vivado (Hands-on) Dr. Indranil Hatai, Siemens</p> |

| Time | Day 6 (05.07.2025) | Day 7 (06.07.2025) |
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| 2:00pm to 4:00pm | <p style="text-align: center;">Lecture 19 Industry 5.0, Key enablers & Applications (Theory) Dr. Thippa Reddy, A&F Univ., China</p> <p style="text-align: center;">Lecture 20 AI-ML in Some Applications on Healthcare, Agriculture, Weather Prediction and Transport System (Theory) Prof. Shanti Prasad Maity, IEST Shibpur</p> | <p style="text-align: center;">Lecture 21 Role of AI and ML in the futuristic Society (Theory) Prof. Bharat Gupta, NIT Patna</p> <p style="text-align: center;">Lecture 22 Securing the Digital Future: How AI and Quantum Computing Will Transform Online Security (Theory) Prof. Alok Tripathi, NIELIT</p> |
| 4:00pm to 6:00pm | <p style="text-align: center;">Lab Session 8 Generation of Control code and testcases using LLM Functional validation of LLM Guided software migration for software sustainability for Industrial 4.0 (Hands-on)</p> <p style="text-align: center;">Dr. Soumyadip Bandopadhyay, ABB Corp.</p> | <p style="text-align: center;">Lab Session 10 Transformer & Multimedia AI (Hands-on) Dr. Suman K. Ghosh, York St. John Univ., UK</p> |
| 6:00pm to 7:00pm | <p style="text-align: center;">Lab Session 9 Gemini and Notebook LLM (Hands-on) Mr. Kartick C Gupta, Google, USA</p> | <p style="text-align: center;">Lecture 23 Use of AI and ML in NANO CHIP development (Theory) Dr. Santosh Mukherjee, SANLAB, USA</p> |
| | | QUIZ Validatory |

Thank You!!