

K. D. K. College of Engineering, Nagpur

Department of Mechanical Engineering

Name of Activity: Value added course on AI in Mechanical Engineering

Notice



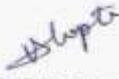
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DEPARTMENT OF MECHANICAL ENGINEERING
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Ref.: KDKCE/MECH/2025-26

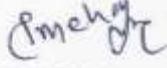
Date: - 05/09/2025

NOTICE

The Students of final year are hereby informed to attend the value added course on **"Importance of AI in Mechanical Engineering"** from 13/09/2025 to 17/10/2025. The training will be delivered by Mr. Pratik Potdar, Head Mentor, Affordable AI, Nagpur.



Prof. V. D. Dhopte
Course Incharge



Dr. P. G. Mehar
Course Coordinator



Dr. A. V. Vanalkar
Head
Dept. of Mech. Engg.
K.D.K. College of Engg., Nagpur-09.

Copy to:-

1. Principal for information
2. Vice-Principal for information.

Poster

K.D.K COLLEGE OF ENGINEERING , NAGPUR
(AN AUTONOMOUS INSTITUTE ACCREDITED BY NAAC & NBA)
..... SINCE 1984.....
DEPARTMENT OF MECHANICAL ENGINEERING

Value Added Course

Importance of AI In Mechanical Engineering


Mr. Pratik Potdar
Alumnus , KDKCE
AI & Data Science Expert
Data Scientist, Infocepts,
Nagpur

Prof . V.D,Dhopte
Dr. A.P. Ninawe
Course incharge

Dr. P.G.Meher
Course co ordinator

Dr. A. V. Vanalkar
Head of Department

Dr. A. M. Badar
Vice-Principal

Dr. V. P. Varghese
Principal

Activity Report

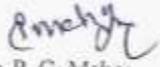
K. D. K. College of Engineering, Nagpur
Department of Mechanical Engineering

Activity Report (2025-26)

Name of Activity	Value added course on "Importance of AI in Mechanical Engineering"
Date	13/09/2025 to 17/10/2025
Number of Participants	49
Resource Person	Mr. Pratik Potdar, Head Mentor, Affordable AI, Nagpur Contact No.: 8551036126

Brief Information about the Activity:

Objectives	<ul style="list-style-type: none">To understand how Artificial Intelligence (AI) enhances traditional mechanical engineering processes through automation, optimization, and intelligent decision-making.To study the role of AI in design, manufacturing, maintenance, and quality control.To analyze how AI helps mechanical engineers solve complex problems, reduce human error, and improve efficiency.
Outcomes	<ul style="list-style-type: none">Students got aware about the applications of AI in mechanical engineering fields such as robotics, manufacturing, thermal systems, and materials engineering.Understood how AI improves design optimization, simulation accuracy, and product development speed.Identify the role of AI in predictive maintenance, fault detection, and condition monitoring of machines.Recognize the impact of AI on smart manufacturing, automation, and cost reduction.Apply basic AI concepts (machine learning, neural networks, expert systems) to solve real-world mechanical engineering problems.
Relevance to PO	PO5, PO6, PO9, PO11

Name of Event In-charge	Name of Event Coordinator	Head
 Prof. V. D. Dhopte	 Dr. P. G. Mehar	 Dr. A. V. Vanalkar HEAD Deptt. of Mech. Engg.

K.D.K. College of Engg., Nagpur-09.

Report

K. D. K. College of Engineering, Nagpur

Department of Mechanical Engineering

Session 2025-26

Report

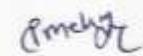
Topic: Value Added Course on "Importance of AI in Mechanical Engineering"



Department of Mechanical Engineering in association with Affordable AI, Nagpur organizes value added course program on "Importance of AI in Mechanical Engineering" from 13/09/2025 to 17/10/2025. Mr. Pratik Potdar, Head Mentor, Affordable AI, Nagpur and his team conducted the program. Total 49 students attended the value added course.

Expert speaker explain the **applications of AI** in mechanical engineering fields such as robotics, manufacturing, thermal systems, and materials engineering. Students understand how AI improves design optimization, simulation accuracy, and product development speed. Speaker emphasizes to identify the role of AI in predictive maintenance, fault detection, and condition monitoring of machines. Students also understood the impact of AI on smart manufacturing, automation, and cost reduction.


Prof. V. D. Dhopte
Course Incharge


Dr. P. G. Mehar
Course Coordinator


Dr. A. V. Vanalkar
HEAD
Deptt. of Mech. Engg.
K.D.K. College of Engg., Nagpur-09.

Sr. No.	Name of Student	13/09/25	16/09/25	19/09/25	22/09/25	25/09/25	28/09/25	30/09/25	29/09/25	28/09/25	30/09/25	01/10/25	03/10/25	04/10/25	16/10/25	17/10/25
43	Aniket Shrivatva															
44	Rishabh Bisen															
45	Harsh Potarwar															
46	Omn Subhash Wadhare															
47	Chetan Gaware															
48	Pransy Pramod Hadke	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
49	Mayur Satish Lokhande															
50	Rakshit Vinay Tagde	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51	Vaibhav Suryavanshi															
52	Niket Avinash Dube	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
53	Rohitav Shridhar Dhaswade	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

V.D. Dilipate

P. H. Mehale

Syllabus

Importance of AI in Mechanical Engineering

Prepared by:-

Pratik Potdar
AI & Data Science Expert

For:-

KDK College Of Engineering, Nagpur

Course Overview:-

This 11-day lecture series introduces mechanical engineering students to the importance of artificial intelligence (AI) in their discipline. Designed to be accessible, the course uses simple explanations, real-world examples, and interactive activities to demonstrate AI's practical applications. Each session lasts 2-3 hours, combining lectures, discussions, and hands-on demonstrations to engage students with little to no prior AI knowledge. The curriculum progresses from AI fundamentals to specific applications in mechanical engineering, concluding with future trends and a hands-on project.

Course Objectives:

- Explain AI and its relevance to mechanical engineering.
- Discuss challenges, ethics, and future opportunities.
- Inspire students to integrate AI into their careers.

Daily Topics:-

Day 1: Introduction to AI and Its Relevance to Mechanical Engineering Overview of AI, its significance in mechanical engineering, and real-world examples, such as AI in self-driving car systems.

Day 2: Basics of Machine Learning (ML) – The Core of AI Understanding machine learning, its types (supervised, unsupervised, reinforcement), and the importance of data in mechanical applications.

Day 3: AI in Mechanical Design and CAD How AI enhances design through tools like generative design, enabling faster prototyping and innovative structures.

Day 4: AI in Manufacturing and Smart Factories AI's role in smart manufacturing, including quality control, process optimization, and Industry 4.0 concepts.

Day 5: AI in Robotics and Automation Exploring AI in robotics for autonomous movement, object recognition, and precision tasks like assembly or welding.

Day 6: AI in Materials Science and Selection Using AI to predict material properties and discover new materials for applications like aerospace or electric vehicles.

Day 7: AI in Fluid Dynamics and Thermodynamics AI's impact on simulating complex systems like airflow or heat transfer for better designs, such as turbine blades.

Day 8: AI in Predictive Maintenance and Reliability How AI uses sensor data to predict equipment failures, minimizing downtime and extending machinery life.

Day 9: Case Studies and Real-World Implementations Examining real examples (e.g., Tesla, Boeing) and lessons from AI successes and failures in engineering.

Day 10: Challenges, Ethics, and Limitations of AI in Mechanical Engineering Discussing data privacy, ethical concerns, job impacts, and the need for human oversight in AI systems.

Day 11: Future Trends and Hands-On Project Exploring AI's future (e.g., sustainable engineering), career opportunities, and a project to propose an AI solution for a mechanical problem.

Day 12: AI in Supply Chain Management and Logistics How AI optimizes supply chains, inventory management, and logistics in mechanical engineering contexts, including predictive analytics for demand forecasting and route optimization.

Day 13: AI Integration with IoT in Mechanical Systems Discussing the synergy between AI and Internet of Things (IoT) for real-time monitoring, smart sensors, and adaptive control in mechanical devices and systems.

Day 14: AI for Sustainable and Environmental Engineering Applications of AI in reducing environmental impact, such as optimizing energy efficiency, waste reduction, and designing eco-friendly mechanical systems for renewable energy.

Day 15: Hands-On Project and Capstone Presentations Students propose and develop an AI solution for a mechanical problem, followed by group presentations, peer feedback, and wrap-up discussions on integrating AI into future careers.

Contact Information

For any questions or further details about the course,

Please contact:

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Phone: 8551036126

V.D. Dhopate

Pratik Potdar

Photographs



