Maharaja Agrasen Institute of Technology, Delhi
Department of Mechanical Engineering

EVENT REPORT **Date: 26 Feb, 2026**

Name of Activity	**AI-Integrated Industrial Robotics Workshop: Programming and Control of a Robotic Arm**
Resource Person	**Mr. Rohan Kapoor**
Date: 26th February 2026	**No. of Participants: 34**

The Department of Mechanical Engineering, Maharaja Agrasen Institute of Technology in collaboration with **KratoX Intelligence Pvt. Ltd.**, successfully organized the **"AI-Integrated Industrial Robotics Workshop: Programming and Control of a Robotic Arm – A Practical Learning Platform for Robotics and Mechatronics"** on **26th February 2026**. The workshop was attended by **35 students.**

The program aimed to provide practical exposure to industrial robotics and bridge the gap between theoretical concepts and real-world applications. The session included a live demonstration of a **6-DOF industrial-style educational robotic arm**, along with detailed discussions on **Python-based robot programming, forward and inverse kinematics, motion planning, joint-level control, and AI-integrated applications** such as vision-based pick-and-place systems.

The workshop significantly enhanced participants' technical understanding, strengthened their programming and hardware integration skills, and promoted industry-oriented learning and innovative project development in robotics and artificial intelligence.


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GPS Map Camera
New Delhi,Delhi,India
Rohini Sector 22, New Delhi, Delhi 110086, India
Lat 28.719173, Long 77.066299
Thursday, 26/02/2026 12:47 GMT+05:30
Note : Captured by GPS Map Camera


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Mapping with Program Outcomes:
The AI-Integrated Industrial Robotics Workshop shows strong alignment with **PO1 and PO2 (Level 3)** by applying engineering knowledge and analytical skills in robotics, kinematics, and automation systems. It significantly supports **PO5 (Modern Tool Usage)** through Python programming and AI-integrated robotic applications, and **PO12 (Life-long Learning)** by exposing students to emerging technologies.
The workshop moderately contributes to **PO3 and PO4 (Level 2)** by introducing motion planning and system-level investigation. It also supports **PO9 and PO10 (Level 2)** through interactive discussions and collaborative learning during practical sessions.

Mapping with Program Specific Outcomes:
The workshop strongly aligns with **PSO1 (Level 3)** by enabling students to explore advanced technologies such as Robotics and AI-ML. It moderately contributes to **PSO2 (Level 2)** through practical exposure to engineering tools and robotic systems, and to **PSO3 (Level 2)** by encouraging innovative projects and industry readiness.

Mapping with Sustainable Development Goals:
The workshop aligns with **SDG 4 (Quality Education)** by providing skill-oriented technical training in robotics and AI. It supports **SDG 8 (Decent Work and Economic Growth)** by enhancing employability and industry-relevant competencies. The initiative contributes to **SDG 9 (Industry, Innovation, and Infrastructure)** by promoting intelligent automation technologies and strengthens **SDG 17 (Partnerships for the Goals)** through industry–academia collaboration with **KratoX Intelligence Pvt. Ltd.**

Subject Gap Fulfilled:
The workshop primarily addressed the **academic gap for 3rd Year (6th Semester) and 4th Year (7th Semester) students**, particularly those studying **Industrial Robotics (Semester VII).**
While the university syllabus covers theoretical concepts such as forward and inverse kinematics, Jacobian, robot dynamics, gripper selection, and industrial applications, students generally have limited exposure to real robotic systems and programming environments.
The workshop fulfilled this gap by providing **hands-on interaction with a 6-DOF industrial-style robotic arm, practical understanding of motion planning and joint control, and exposure to Python-based programming and AI-integrated applications**. It also benefited 2nd and 3rd year students by introducing advanced robotics concepts before formal coursework, thereby strengthening conceptual clarity and industry readiness.

Learning Outcomes of the AI-Integrated Industrial Robotics Workshop:

1. **Understand the structure and working** of a 6-DOF industrial robotic arm and its components.
2. **Apply forward and inverse kinematics concepts** to analyze robotic motion.

3. **Interpret manipulator movement and joint-level control mechanisms** in practical scenarios.
4. **Demonstrate basic Python-based robot programming** for motion execution.
5. **Explain motion planning concepts** in joint space and Cartesian space.
6. **Identify the role of sensors, actuators, and end-effectors** in robotic systems.
7. **Understand AI-integrated applications** such as vision-based pick-and-place and gesture/voice control.
8. **Relate theoretical robotics concepts to real-world industrial automation systems.**
9. **Develop problem-solving skills** in robotic system integration and automation tasks.
10. **Explore innovative project ideas** in robotics and AI for final-year academic projects.

List of Participants:

S. No.	Name of the Participant	Group	S. No.	Name of the Participant	Group
First year					
1	Akanshi	2ME1	2	Pradyumn Bajpai	2ME1
Second Year					
3	Prashant Kumar	4ME1	4	Piyush Sharma	4ME1
5	Gautam	4ME1	6	Aman Kumar Verma	4ME1
7	Ashmit	4ME2	8	Yash Bansal	4ME2
9	Manmohan Singh	4ME2	10	Divyansh Singh	4ME3
11	Parshant	4ME3	12	Lakshay Arora	4ME3
13	Jaskirat Singh	4ME3	14	Kunal	4ME3
15	Jalaj Rohatgi	4ME3	16	Mohit	4ME3
17	Vaibhav Kumar	4ME3	18	Mukul Revalia	4ME3
19	Rishabh Aditya	4ME3	20	Sabre Alam	4ME3
Third Year					
21	Devansh Chawla	6ME1	22	Tanmay Mathur	6ME1
23	Sundaram	6ME2	24	Nipun Tyagi	6ME2
25	Subhash	6ME2	26	Piyush	6ME2
27	Akshat Shanker	6ME3	28	Nadeem Hussain	6ME3
29	Nishant Anand	6ME3	30	Nandini	6BBA
Fourth Year					
31	Rishank Dabas	8ME2	32	Sanskar	8ME2
33	Prisha Sagar	8ME2	34	Dhruv	8ME2