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VIVA Institute of Technology
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NAAC "B++" Grade

REPORT

Topic Name:	INNOVATIVE AUTOMATION: ROBOTICS IN INDUSTRY 4.0
Name of the Guest Speaker:	Mr. Aniket Nargundkar
Designation:	ASSISTANT PROFESSOR
Organization/Institution:	SYMBIOSIS INSTITUTE OF TECHNOLOGY, PUNE
Date:	19/07/2024
Time:	11.00am-1.00pm
Participant details:	24 Students and 5 Faculties

Objectives:

1. To Understand the Role of Robotics in Industry 4.0 and explore how robotics integrates with smart manufacturing systems thereby highlighting the shift from traditional automation to intelligent automation.
2. To Analyze the Impact of Robotics on industrial processes to evaluate improvements in productivity, quality, and safety.
3. To examine key Technologies Enabling Robotic Automation and to study the application of AI, IoT, and machine learning.

Outcomes:

1. Enhanced Understanding of Robotics Integration in Industry 4.0: Learners and professionals will grasp how robotics fits into the broader Industry 4.0 ecosystem.
2. Ability to Identify and Evaluate Automation Technologies: The participants will be able to distinguish between traditional and innovative robotic systems, including AI-driven and IoT-enabled robots.
3. Real-World Industrial Applications: Participants will get exposure to case studies which will help contextualize the use of robotics in various industries like automotive, healthcare, and logistics.

Programme Summary/Details:

Mr. Aniket Nargundkar commenced his lecture by exploring how robotics is transforming modern industry under the umbrella of the Fourth Industrial Revolution. He stated that Industry 4.0 refers to the integration of cyber-physical systems, the Internet of Things (IoT), and cloud computing into manufacturing and industrial practices to create "smart factories" that are more efficient, adaptive, and responsive. He emphasized on collaborative robots (cobots), autonomous mobile robots (AMRs), and AI-driven automation.

The key features of the Robotics in Industry 4.0 are Interconnectivity, Artificial Intelligence and Machine Learning, Flexibility and Customization and Data driven Optimization. Mr. Nargundkar outlined the various applications across industry such as Manufacturing, Healthcare, Agriculture, Warehousing and Logistics, Construction, etc. He also focused on the benefits and opportunities of Robotics such as Increased efficiency and productivity, enhanced safety by reducing human exposure to hazardous environments, better quality control through precision and consistency, scalability and customization in production processes.

He encouraged students to focus on continuous learning and skills enhancement. He highlighted the value of certifications and training programs offered by industry organizations. Additionally, he emphasized the significance of soft skills such as communication, teamwork, and project management, which are crucial in the professional world.

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