

Robotics Open Elective Stream

From Industrial Robots to Autonomous Intelligence

Robotics is one of the fastest-growing and most exciting fields of engineering, transforming industries ranging from manufacturing and healthcare to agriculture, construction, logistics, autonomous vehicles, and space exploration. At the heart of every robotic system lies the integration of mechanical engineering, electronics, computer science, artificial intelligence, sensing, and control systems.

To equip students with the knowledge and skills required in this rapidly evolving field, the Department of Mechanical Engineering offers a **Robotics Open Elective Stream** for students of **Civil Engineering, Computer Science & Engineering, Electronics & Communication Engineering, Electrical & Electronics Engineering, and Information Technology**.

Designed as a progressive four-semester learning journey, this elective stream introduces students to the following courses:

- **Introduction to Industrial Robotics** (*III Semester*)
- **Kinematics and Dynamics of Robotics** (*IV Semester*)
- **Drives and Control Systems for Robotics** (*V Semester*)
- **Introduction to Autonomous Mobile Robots** (*VI Semester*)

Together, these courses provide a comprehensive understanding of how robots are designed, programmed, controlled, and deployed to perform intelligent tasks in real-world environments.

The interdisciplinary nature of robotics makes it an ideal complement to your core engineering discipline. Whether your interests lie in software, electronics, automation, embedded systems, artificial intelligence, or smart infrastructure, these courses provide valuable knowledge that broadens your technical perspective and enhances your career opportunities.

The concepts covered are directly relevant to emerging technologies such as **Artificial Intelligence (AI), Industry 4.0, Smart Manufacturing, Autonomous Vehicles, Drone Technology, Internet of Things (IoT), Healthcare Robotics, and Intelligent Automation**. They also provide an excellent foundation for higher studies, research, innovation, and technology-driven careers.

Join the Robotics Open Elective Stream and embark on an exciting journey from understanding industrial robots to exploring the intelligent autonomous systems that are shaping the future of engineering.