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Robotics & Autonomous Systems

Course No. 518A

The Robotics & Autonomous Systems course provides participants with a solid foundation in the design, programming, and application of intelligent robotic systems. It covers the fundamentals of robotics, sensors, control systems, AI-driven autonomy, and real-world applications across industries such as manufacturing, healthcare, logistics, and autonomous vehicles.

Course Benefits

This course equips learners with practical knowledge and hands-on skills to understand and work with modern robotic platforms and autonomous systems.

Prerequisites

Basic knowledge of programming (Python or C++ preferred). Familiarity with mathematics and physics fundamentals.

Duration

Five Days (35 hours)

Learning Objectives

At the end of this course, participants will be able to:

1. Understand the fundamental principles of robotics and autonomous systems
2. Apply control theory and sensor integration to robotic applications
3. Explore computer vision and machine learning techniques for autonomy
4. Design and simulate robotic motion planning and navigation
5. Evaluate real-world applications of robotics in industry and research
6. Understand ethical, safety, and societal implications of autonomous systems

Topics Covered:

- Introduction to Robotics & Mechatronics
- Kinematics, Dynamics & Control
- Sensors, Actuators, and Embedded Systems
- Path planning & Motion control
- Artificial intelligence in robotics
- Computer vision & object recognition
- Human-resource interaction
- Autonomous vehicles & drones
- Robotics in industry 4.0 & smart manufacturing
- Safety, ethics, and future trends in robotics



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Who Should Attend?

This course is ideal for engineers, technologists, managers and decision-makers exploring automation solutions, or professionals interested in robotics and AI applications.

Instructor

The instructor is a professional with 10+ years of robotics, automation, and AI experience in various industries.

For More Information:

Contact Training administrator: Training@qpsinc.com , Telephone: (508) 786-0777