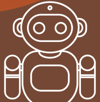
ady.
ADYAPAN

Adyapan
School

Robotics



Duration - 2 months

Industry
Certification

Skill India
कौशल भारत-कुशल भारत
N·S·D·C National Skill Development Corporation
Transforming the skill landscape

Skill India Certified

250+
Partner Companies

Adyapan School

From circuits to motion master robotics.

From algorithms to autonomous systems - become industry-ready.

This immersive 8-week Robotics program takes you beyond theoretical concepts into real-world robot design and control. Learn kinematics, dynamics, motion planning, and advanced control systems through hands-on simulations and guided projects. With a strong focus on practical implementation and system-level thinking, you'll graduate with the ability to model robotic systems, plan intelligent movements, and develop robust control strategies for real-world robotic applications.

8	30+	20,000+
MODULES	PROGRAM OFFERINGS	STUDENTS

250+ PARTNERED COMPANIES

adyapanschool.com

Adyapan School

ABOUT ADYAPAN SCHOOLS

Where education meets real-world impact

Not just a course — a platform to launch your career.

Adyapan Schools was built with a single conviction: learning works best when it happens in the real world. We partner with top companies, mentors, and industry platforms to ensure every student graduates with a portfolio of work that speaks louder than a certificate.

Our programs combine rigorous coursework with live client projects, giving you the skills and proof-of-work that employers actually want.

MISSION

To equip ambitious learners with practitioner-level digital marketing skills through mentor-led, project-based education that bridges the gap between learning and earning.

VISION

To be India's most trusted launchpad for the next generation of marketing leaders — defined not by degrees but by the real work.

Adyapan School

Everything you need to grow fast

PROGRAM HIGHLIGHTS

Live Industry Projects

Work on campaigns for real brands alongside your coursework. Build portfolio projects that prove your expertise to employers.

1-on-1 Mentorship

Dedicated mentors from Google, Microsoft, Mastercard and more. Get personalized guidance and industry connections.

AI-Powered Marketing

Learn cutting-edge AI tools alongside evergreen fundamentals. Stay ahead of the curve in a rapidly evolving landscape.

Dual Certification

Earn both a Course Completion and Internship Certificate — accredited by Skill India Digital Hub and NSDC.

Internship Guarantee

Graduate with an internship completion certificate from a live brand project. Concrete, resume-ready proof of work.

Industry Network

Join a network of alumni at Amazon, Google, Adobe, Microsoft. Access exclusive hiring events and referral opportunities.

Adyapan School

CURRICULUM

8 weeks. 8 modules. Infinite impact.

WEEK 1

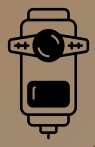
Foundations of Motion and C-Space

- Discussion of Curriculum
- Learn the fundamental material regarding robot configurations for both serial mechanisms and closed chains.
- Degrees of freedom, C-space topology, and implicit vs. explicit.
- Understand the differences between holonomic and nonholonomic constraints in robotic movement.
- Representation of spatial velocities and forces as twists and wrenches

WEEK 2

Forward Kinematics and Open Chains

- Apply the product-of-exponentials formula to solve forward kinematics (calculating the "hand" configuration based on joint values).
- Study the relationship between joint velocities and end-effector twists.
- Relate joint forces and torques to end-effector wrenches using fundamental mathematical modeling.



WEEK 3

Inverse Kinematics and Closed Chains

- Calculate the specific joint values required to achieve a desired "hand" or end-effector configuration.
- Apply kinematic modeling to complex robots with closed loops or chains.
- Begin utilizing the V-REP simulator and the Modern Robotics software library (Python) to visualize these movements

CURRICULUM

8 weeks. 8 modules. Infinite impact.

WEEK 4

Robot Dynamics and Trajectories

- Numerical algorithms to calculate a robot's acceleration given its configuration, velocity, and joint forces.
- Calculate the required joint forces and torques given the desired acceleration, useful for high-level robot control.
- Learn how to plan smooth robot trajectories while remaining subject to dynamic constraints.

WEEK 5

Motion Planning in Complex Environments

- Foundational concepts of motion generation in the presence of obstacles using graphs, trees, and graph search.
- Implement grid-based motion planning, randomized sampling-based planners, and virtual potential fields.
- Introduction to motion control and tracking planned paths in real-time.

WEEK 6

Advanced Control and Force Feedback

- Master real-time feedback control strategies to ensure a robot accurately tracks a planned motion.
- Explore advanced control schemes, including pure force control and hybrid motion-force control for interaction tasks.
- Apply software library standards to ensure your controllers are efficient and modular.

CURRICULUM

8 weeks. 8 modules. Infinite impact.

WEEK 7

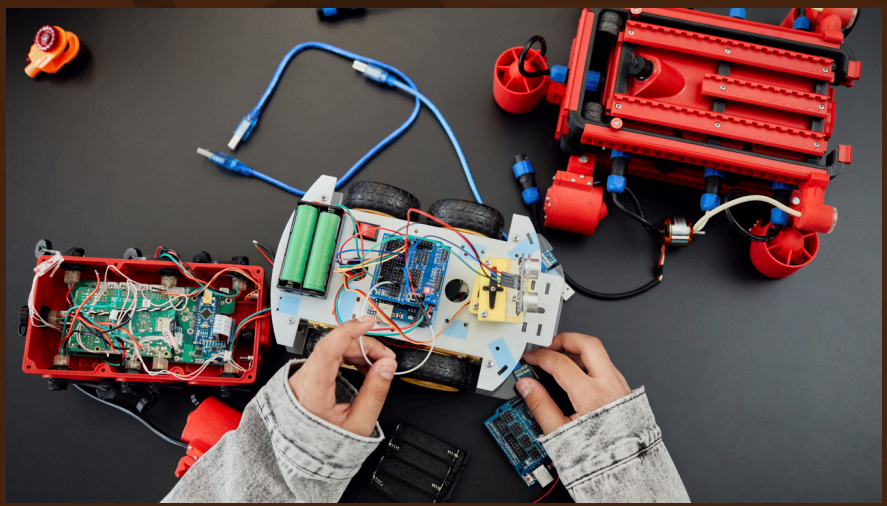
Manipulation and Wheeled Mobile Robots

- Model the kinematics and forces between rigid bodies in contact to plan robot grasping and manipulation tasks.
- Study the modeling, motion planning, and feedback control of omnidirectional and nonholonomic wheeled mobile robots.
- Learn the specific control requirements for a system consisting of a wheeled mobile base paired with a robot arm.

WEEK 8

Mobile Manipulation Capstone

- Develop software to plan and control the motion of a KUKA youBot mobile manipulator to perform a pick-and-place task, integrating trajectory planning, odometry, and feedback control in the V-REP simulator.



Adyapan School

WHO THIS IS FOR

This course is perfect for

- Students & Career Switchers
- Aspiring Robotics & Automation Engineers
- Electronics & Mechanical Engineering Students
- Tech Entrepreneurs & Robotics Innovators
- Working Professionals in Tech & Manufacturing
- AI, IoT & Embedded Systems Learners

CERTIFICATIONS

ALUMNI NETWORK

Our alumni work at world-class companies

Amazon | Adobe | Google | Autodesk | Microsoft | Deloitte

Your career switch is one click away.

Ready to begin? Apply at adyapanschool.com or email us at support@adyapan.com

Apply Now