



Robotics & Autonomous Systems

BTech in Robotics & Autonomous Systems (RAS) integrates AI and computer science with electronics and mechanical engineering. It enables students to design intelligent systems that interact with humans and the environment.

Creating smart systems

The RAS major allows learners to gain hands-on experience in robotics, IoT and AI while addressing transformative challenges like autonomous mobility, precision farming and next-generation healthcare systems.

The major is ideal for students looking to:

- Solve complex real-world problems by integrating hardware and software.
- Explore emerging fields such as AI-driven robotics, human-computer interaction, and autonomous systems.
- Develop autonomous systems that drive innovation across industries.



Admissions process

The holistic admissions process identifies and empowers exceptional, curious students who demonstrate strong academic rigor and excel in co-curricular and extra-curricular activities.

It includes an online application, interaction with the admission team and a technical interview. Applicants must have studied Mathematics until Class 12 to be eligible for the RAS major.



Scan the QR code to learn more about the admissions policy.

Faculty at RAS

The faculty comprises accomplished teachers, researchers, and practitioners who have trained and worked at some of the world's leading universities.



Shashank Tamaskar

Program Chair, Robotics & Autonomous Systems

Associate Professor, Plaksha University

PhD - Aeronautics & Astronautics

Purdue University

The Director of Center for Sustainable and Precision Agriculture, Prof Shashank seeks to pursue industry-focused research in multi-agent robotic path planning, control and flexible robotic manipulation, with the long-term vision of improving the adoption of robotics in India.



Sunita Chauhan

Dean of Research, Plaksha University

Professor

PhD - Medical Robotics

Imperial College London

Prof Sunita is a professor and founding director of the Center for Equitable & Personalized Health at Plaksha. She serves on the board of directors and advisory of several organizations and institutions across the globe.

Srikant Srinivasan

Dean of Academics, Plaksha University

Professor

PhD - Electrical and Computer Engineering

Purdue University

Prof Srikant previously served as Associate Professor in the School of Computing & Electrical Engineering at the Indian Institute of Technology Mandi, where he also held the position of Associate Dean. His areas of expertise include IoT systems and nanoelectronics.



Sandeep Manjanna

Assistant Professor

PhD - Computer Science

McGill University

A founding faculty at Plaksha, Prof Sandeep's research focuses on applied machine learning and robotics with interests in robotic active sampling, multi-robot coordination, robotic sensor networks, reinforcement learning and machine learning.

Shashikant Pawar

Assistant Professor

PhD - Mechanical Engineering

IISc Bengaluru

With a specialization in turbulent flows, Prof Shashikant's research interests include pollution dispersion, bio-inspired energy-efficient and sustainable systems, light propagation through turbulent media and engineering education.





Vivek Deulkar

Assistant Professor
PhD - Electrical Engineering
IIT Bombay

Prof Vivek holds an MTech in Control and Computing from the Department of Electrical Engineering at IIT Bombay. His areas of expertise include Weber-Maxwell electrodynamics, energy and sustainability.

Amruta R Behera

Assistant Professor
PhD - Nano Science and Engineering
IISc Bengaluru

Prof Amruta completed his MSc (Engineering) from IISc Bengaluru. He has worked on developing compact near-infrared spectrometers for quality analysis of food and agricultural produce.



Dhiraj Sinha

Assistant Professor
PhD - Electrical Engineering
University of Cambridge

Prof Dhiraj studied electrical engineering at the Institute of Engineering and Technology, University of Lucknow, India and telecommunications at ENST de Bretagne, Brest, France.

Andy Lee Ruina

Visiting Faculty
PhD - Applied Mechanics
Brown University

Prof Andy's main expertise is in solid mechanics and dynamics, with specialties in robotics, biomechanics, friction, collisions, bicycle dynamics and mechanics of legged locomotion. His best-known papers are on state-variable friction, energy-efficient walking robots and bicycle balance.



Course themes in RAS



Physical Sciences

Exploring matter, energy, forces and motion for engineering mechanics, fluid dynamics and understanding the physical world in engineering.

- Foundations of Physical World
- Fluids in Action
- Engineering Mechanics

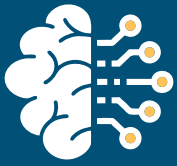
Focusing on the design and organization of a computer's core components, defining how hardware and software interact to process data efficiently and perform tasks.

- Embedded Systems
- Computer Networks
- Foundations of Computer Systems



Computer Architecture





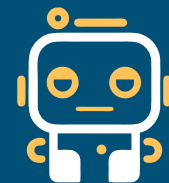
Artificial Intelligence and Machine Learning

Understanding how machines learn from data, automate tasks and make intelligent decisions, combining programming, statistics and real-world problem-solving skills across industries.

- Machine Learning & Pattern Recognition
- Deep learning
- Reinforcement Learning Fundamentals

Exploring the integration of computing, sensors and control systems to design smart, connected technologies like autonomous vehicles, robotics and industrial automation.

- Intelligent Machines
- Electronics Systems Engineering
- Computer Networks
- Signals & Systems
- Introduction to Microsystems



Autonomous Systems



Robotics and Control

Designing systems that monitor, control and automate processes using sensors, controllers and actuators, key for robotics, manufacturing and smart technologies.

- Control, Autonomy, Planning & Navigation
- System Dynamics & Control
- Sensing & Actuation

RAS students

addressing grand challenges

The RAS major fosters a hands-on learning environment where students actively engage in impact-driven projects. Through collaborations with industry, government and academia, they gain insights into practical applications and contribute to cutting-edge research.

Student projects

1. Biomimetic Robotic Fish

Inspired by aquatic locomotion, this project focuses on the design and testing of a biomimetic fish robot, including the development of a tail fin that mimics natural fish movements for efficient propulsion and control. The design process involves material selection, structural modelling and learning-based simulations. The broader vision is to create adaptive underwater systems for ecosystem monitoring in realistic aquatic environments.

Kaustubh Singh, Class of 2025

2. BiSteer Cycle

The vehicle is designed with steering and drive inputs for both wheels to support both bicycle and Segway modes through a unified control architecture. The project develops stable and adaptive mobility systems using acceleration-controlled modelling and autonomous control techniques to address challenges associated with implementing torque-based control systems for real-world navigation.

Jia Bhargava & Tanay Srinivasa, Class of 2026

3. Autonomous Underwater Vehicle (AUV) – SAUVC 2025

Over eight months, students built an AI-enabled system capable of performing underwater tasks such as navigation and environmental sensing. It focused on systems integration, combining vision pipelines with control systems under real-world constraints.

Nikhil Henry, Abhinav Lodha, Anshuman Sharma & Subham Jalan, Class of 2026

Student internships

Abhigyan Mehrotra, Class of 2026

Bhabha Atomic Research Centre

Mokash Soni, Class of 2026

Agmitra Technologies

Tanay Srinivasa, Class of 2026

U R Rao Satellite Centre

Sohan Panda, Class of 2027

IndiaMART

Career pathways

Graduates can explore diverse roles and career opportunities, including:



Robotics Engineer



AI and Machine Learning Engineer



Autonomous Systems Designer



Embedded Systems Engineer



Autonomous Vehicle Engineer



Academia & Research



Email: apply@plaksha.edu.in

Address: Alpha Sector 101, IT City Road, SAS Nagar, Punjab

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Scan the
QR code to apply.

