



A COLLABORATION OF ASTROWING MNIT AND TSAW.



BUILDING ON IMAGINATION



**BUILD YOUR OWN
ROBOTS**



ABOUT US

Robotics Club MNNIT is a diverse group of robotics enthusiasts from all the college departments, which runs under the umbrella of the Student Activity Centre of MNNIT Allahabad.

Established in 2016, we are mainly concerned with building robots for academic purposes, competing at national events, or even building just out of imagination. This puts us in frequent contact with a plethora of software, hardware, and technologies, like Computer Vision, Simulation Softwares (Gazebo, Pybullet, etc.), CAD Softwares, ROS, devising algorithms, path planning, Machine Learning, Microcontrollers, Kinematics to name just a few of many. Since its creation, this club has seen the completion of hundreds of projects, participated and won accolades in multiple national-level events, and organized various workshops with a decent footfall.

Working closely with the industries, our people regularly acquire lucrative tech giants packages, internships in IITs, and various tech companies.

Our club has also been the birthplace of a startup TSAW in the drone sector, gaining ground in the field and as a company.

We have a team of friendly experts equipped with all kinds of tutorials and workshops along with a compelling workspace to make you an integral part of this rapidly expanding world.

Jigyasa

"Tell me and I forget, teach me and I may remember, involve me and I learn."

-Benjamin Franklin

Jigyasa is the workshop venture of the Technical clubs of MNNIT, namely Robotics, Aeroclub, and Astrowing, in collaboration with TSAW, a fully functional drone startup that emerged from our clubs. We are motivated by the desire to supplement education with the present-day industry requirements, making the participants future-ready with their skills and a problem-solving mindset.

The workshops under Jigyasa comprise various projects, activities, and interactive sessions, which will help you understand the most difficult concepts in the most comfortable manner. Hence, by emphasizing innovation and imagination, these workshops will instill in your minds a profound scientific temperament and fascination towards technology.



OVERVIEW

"Robotics and other combinations will make the world pretty fantastic compared with today"

~ Bill Gates

With automation and technology booming in today's world, robotics is now emerging as an essential tool for thriving as the future STEM workforce. With this workshop, we aim to introduce you to the realm of robotics, and walk you through its basics. You'll also learn about Arduino (a programmable microcontroller), and the simulation softwares with which you can build and program your own robots later, apart from the ones you learn in these sessions. By the end of the workshop, you'll gain a decent understanding of the working of a good part of the machines around you, and be capable of transforming a figment of your own imagination into a real, functional robot.

Prerequisites:

None

Target Audience:

Class 8th- 12th or Anyone Interested

WORKSHOP SCHEDULE

DAY 1:

- WHAT IS ROBOTICS
- COMPONENTS OF A ROBOT-PERCEPTION PLANNING AND ACTUATION
- ROBOT VS MACHINE
- APPLICATION OF ROBOTS IN INDUSTRY IN 2021
- UNDERSTANDING SOME COOL ROBOTS-LINE FOLLOWER, WALL FOLLOWER, SOPHIA, SELF DRIVING CAR
- INTRODUCTION TO LINE FOLLOWER

DAY 2:

- INTRODUCTION TO LINE FOLLOWER (CONTD.)
- INTRODUCTION TO SENSORS- TYPES OF SENSORS
- INTRODUCTION TO MICROCONTROLLER-ARDUINO
- LEARNING MORE ABOUT ARDUINO
- BASIC ARDUINO SIMULATIONS IN TinkerCAD
- CODING ARDUINO WITH BLOCK DIAGRAMS
- UNDERSTANDING BREADBOARD

DAY 3:

- MAKING COLOURFUL PATTERNS WITH ARDUINO
- SOME PRACTICE PROBLEMS WITH ARDUINO
- ARDUINO (CONTD)
- UNDERSTANDING MOTORS
- CONNECTING MOTORS WITH ARDUINO
- MAKING LINE FOLLOWER CIRCUIT IN ARDUINO
- HOW TO DEVELOP ON SKILLS GAINED: PROJECTS AND RESOURCES

OUR OTHER WORKSHOPS

ASTRONOMY

- Beginner's walkthrough of Astronomy
- Diving Deeper into the Cosmos
- Astronomy from an Engineer's Perspective
- Establishing an Astronomy Club

AEROSPACE

- Introduction to Flight
- A peek into the Aerospace Sector
- Getting Started with Drones
- Drone Automation
- Establishing an Aeroclub in your College
- First step to Aerodynamics with OpenVSP, F360 and Ansys

GENERAL

- Rise and Program
- Think3D: Fundamental of 3D Modelling and 3D Printing
- Learn3D: Introduction to CAD and 3D Printing

ROBOTICS

- Kickstart your journey into Robotics
- Introduction to Artificial Intelligence
- Introduction to Kinematics in Robotics using PyBullet
- Kit-up to Set-up: To Establish a Robotics Club
- Build your own Robot
- Introduction to Simulation Software in Robotics
- Stepping into Electronics and Arduino
- Introduction to Computer Vision with Raspberry Pi
- Introduction to Autonomous Vehicles with CARLA and Imitation Learning
- Internet of Things (IoT)

CONTACT US

 +91-9530849651 / +91-6393125739

 roboticsclub@mnnit.ac.in

 <http://roboticsclub.mnnit.ac.in/>