AutoBOTICS

A two days workshop on
Making of Basic Autonomous Robots.

EISYSTEMS SERVICES
FF-113, Express Greens Plaza, Sector 1
Vaishali (Ghaziabad) – Delhi NCR
India – 201010

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Workshop Content

SESSION 1: Introduction to Basic Electronics

Expected Duration of Session: 30 mins- 1 hour

- Basic Electronics Components
- Fundamental of Electronics Components
- Resistors
- Transistors
- Capacitors
- Diodes

SESSION 2 # Basic Building Session of UGVs

Expected Duration of Session: 1.0 hour- 1.25 hours

- Electronics Components related to UGV Systems.
- Basic Circuit Modules like (Voltage Regulation, Motor Drivers etc.)
- Choosing the electronics components & assembly for purpose.
- What are Integrated Circuits? Which ICs are commonly used and How?
- What are Photo sensors?

SESSION 3: Introduction to Microcontrollers

Expected Duration of Session: 1.5 hour- 2 hours

- What is microcontroller?
- Difference Between microcontroller & microprocessor?
- Introduction to Arduino & Atmega Microcontrollers
- Architecture of the Arduino UNO board
- How can we use an own microcontroller board in our project?
- Pin description of Arduino UNO R3

SESSION 4: Introduction to Arduino Programming

Expected Duration of Session: 1.0 hour- 1.5 hours

- Installation of Software
- Introduction of major elements of Arduino compatible software
- Arduino Programming basics & hardware interfacing.
- Program structure and debugging
- First Program.

Experiment 1: Simple LED Blinking Program.
Experiment 2: LED Pattern Showcasing Program.

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SESSION 5 # Line Follower Robot Session

Expected Duration of Session: 1.5 hour- 2.0 hours

Development of Line Follower Robot

- What is a line follower robot
- Testing of line follower
- How to make it move faster
- Code Optimisation

SESSION 6 # Edge Avoider Robot Session

Expected Duration of Session: 1.5 hour- 2.0 hours

Development of a Edge Avoider Robot

- What is edge avoider robot.
- Development and Testing of Final Circuit
- Code Optimisation

SESSION 7 # Obstacle Detector Robot Session

Expected Duration of Session: 1.5 hour- 2.0 hours

Development of a Edge Avoider Robot

- What is edge avoider robot.
- Development and Testing of Final Circuit
- Code Optimisation

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Prerequisites & Eligibility

- This is a basic level workshop and anybody is eligible to join this workshop.
- The course and curriculum of this workshop is more inclined towards Mechanical/Mechatronix/Electronics/Computer Science department however anybody can join this workshop even from different department.
- Participants are expected to bring their laptop (Windows Platform) atleast one in a group of 4/5 for better understanding of practical session in the workshop (Windows OS only).
- Mode of Training/Teaching will be English only.

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