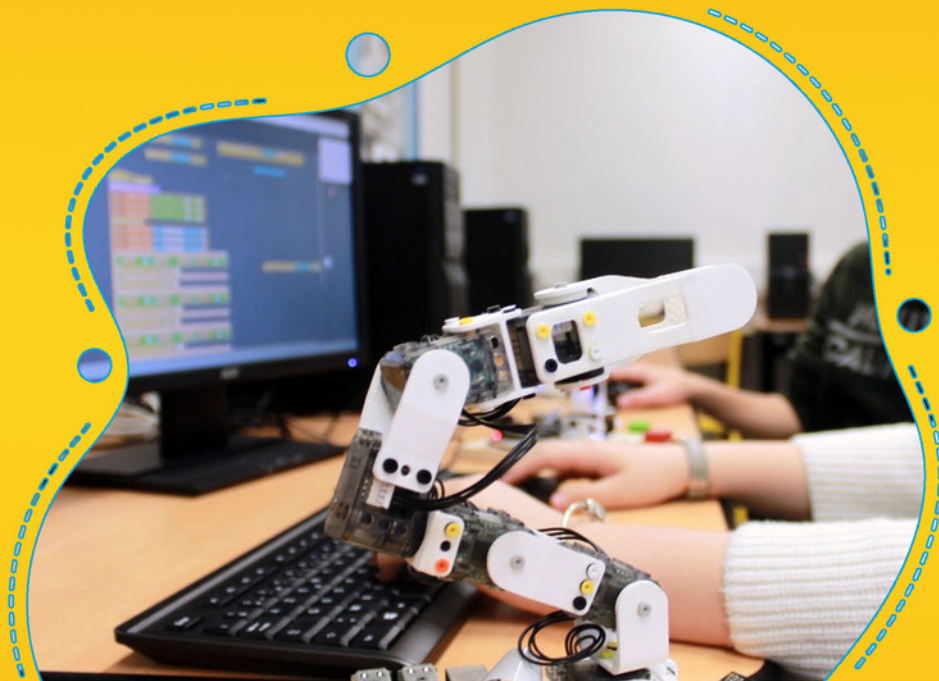




RoboSmart Labs

REDEFINING ROBOTICS EDUCATION



80 Hours Course - Achiever

(Standard 6 - 8)

Course code: RSLILANA12



HANDS-ON
IN - LAB
COURSE SERIES



RoboSmart Labs

REDEFINING ROBOTICS EDUCATION

INTRODUCTION TO ROBOTICS

Learning Outcome & Projects

About Robot Smart Labs, What is a Robot?, Robots in Movies?, Robots in Real Life?, Demonstration of all Robots in Lab, Parts of Robots, Mechanical parts working - observation - lab tour, Electronics parts working - observation - lab tour, Programming working - observation - lab tour

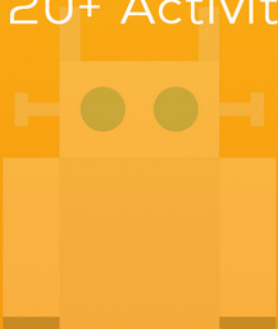
ROBOT- ELECTRONICS

Learning Outcome & Projects

Making your First Circuit, Battery / Power, Light & Buzzer, Dimmer, Switch & push button, Motor & High Speed Motor, Copy, Wire & Connectivity, Limit switch, Sensor base with threshold, Obstacle sensor, Light sensor & Motion sensor, Not gate, And gate, U-right, Pulse/ Delay, Transmitter & receiver, Submersible water pump, Servo motor, OR & Toggle, PROLOGIC Controller - ARDUINO, 20+ Activities

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ROBOT - MECHANICS

Learning Outcome & Projects

Two Wheel Driver Horizontal Robot, Two Wheel Driver Vertical Robot, Four Wheel Driver Horizontal, Obstacle Avoidance Robot, Four Wheel Drive Obstacle avoidance Robot with Phone, Vertical Steering Robot with Ultrasonic Sensor, Gripper Robot with Phone, QR Code based Localization, Vertical Pick and Place Robot, Horizontal Pick and Place Robot, Football Playing Robot, Customise your Robot

ROBOT - CODING

Learning Outcome & Projects

Digital Output – LED State Control, Analog Output – LED Brightness Control, Digital Input – Reading the State of Switches, Analog Input – Reading Potentiometer, Evive's Display – Hello World!, Beetle in the Maze, The Hungry Shark, Displaying Patterns on RGB LED Strip, Making Custom Patterns on RGB LED Strip, Controlling a DC

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REDEFINING ROBOTICS EDUCATION

Motor using PictoBlox, Hand Controlled 4-Wheel Robot, Automated Steering Robot, Pick and Place Vertical Robot, Obstacle Avoidance Robot, Advance Self Driving Robot,

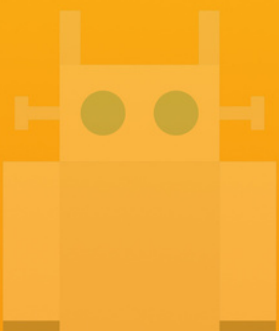
DRONES

Learning Outcome & Projects

INTRODUCE AEROMODELLING, DYNAMICS OF AN AERIAL SYSTEM, AXES OF ROTATION, Introduction To Drones, History Of Drones, Types Of Drones, Applications Of Drones, Future Applications Of Drones, FORCES OF FLIGHT IN DRONES, Controls Of An Airplane, Controls Of A Drone, BUILDING THE DRONE – PLUTO, TEST FLIGHT, Drone Piloting Observation

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3D - PRINTING

Learning Outcome & Projects

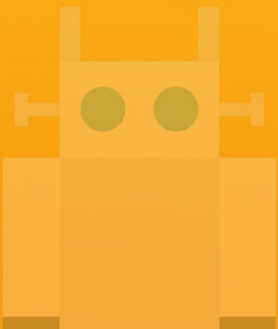
What is 3D printing?, History of 3D printing, The use of 3D printing, 3D PRINTING TECHNOLOGIES, Getting a 3D model, Online libraries and 3D hubs, 3D modelling software, Modelling activities Using 3D pen, Modelling in a 3D software, Safety of 3D printers, Handling a 3D printer, Setting up for printing, Emergency handling, Finishing process

HUMANOID

Learning Outcome & Projects

Introduction to Humanoid Robotics, Safety on Humanoid parts motors, battery care & Charging, Parts of Humanoid, Construction of Humanoid, Coding of Humanoid Activities, Walking with Code, Multiple Actions with Humanoid, Detect Face and Wave, Piloting of humanoid

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REDEFINING ROBOTICS EDUCATION

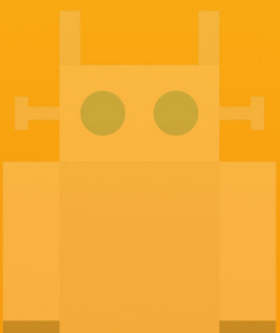
VIRTUAL REALITY / AR - EXPERIENCE & CREATIONS

Learning Outcome & Projects

Getting familiar with VR and VR hardware, Safety Regulations, VR (Virtual Reality) mode, AR (Augmented Reality) mode, Register, Create, Explore Develop 3D creation skills, Working with variables, lists functions, Screen templates and Camera movements, Editor, Navigation, Building, Co locks, Play mode & Gyro mode of VR headset, VR (Virtual Reality) mode & AR (Augmented Reality) mode, 360° tours and Virtual exhibitions

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CODING - COMPUTER SCIENCE / TECHNOLOGY

Learning Outcome & Projects

SCRATCH ADVANCE

Creative computers - Introduction to Programming languages, Your First Animation! Getting Scratch with Coding - The Scratch interface, Variables and Arithmetic Operators, Conditional Statements and Logical Operators, Analog Input/output in PictoBlox

APP DEVELOPMENT WITH APP INVENTOR 2

Mobile Android Application development - Java Software Application, Mobile Application, Programming Application, SDLC, Layout, UI designing, Design editor, Coding blocks editor, Emulator, Application package, Testing application, Bounce Sprite Off canvas edge, Adding sound, Speech recognition, Movement on a timer, Start / stop timed movement, Movement with sensors, Random numbers, Multiple screens, Creating your own colours, Fling movement

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