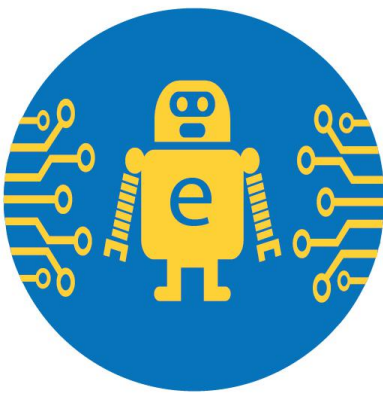
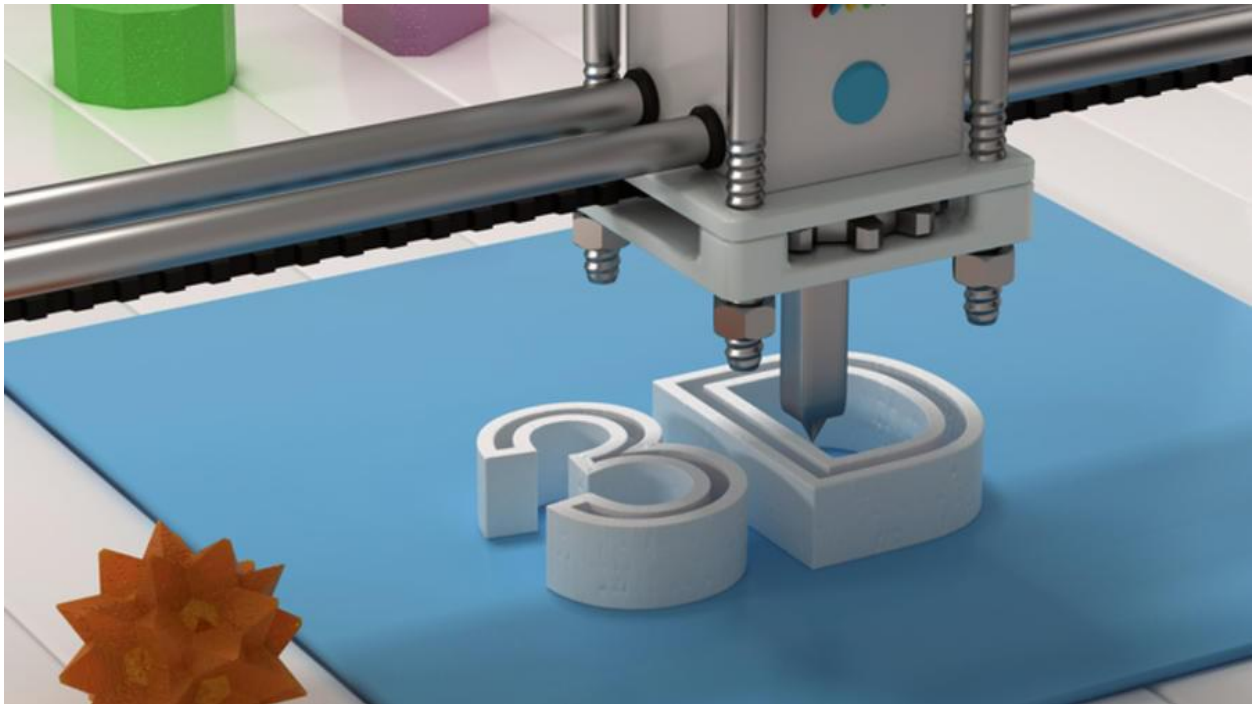


Hands-on Workshop on 3D Printing & Additive Manufacturing



EtechRobot®
Enhancing Education through Technology

Address : B.No 24 Shivaji Marg, Neemuch, Madhya Pradesh

Contact : +91 7987619448, +91 7999732826

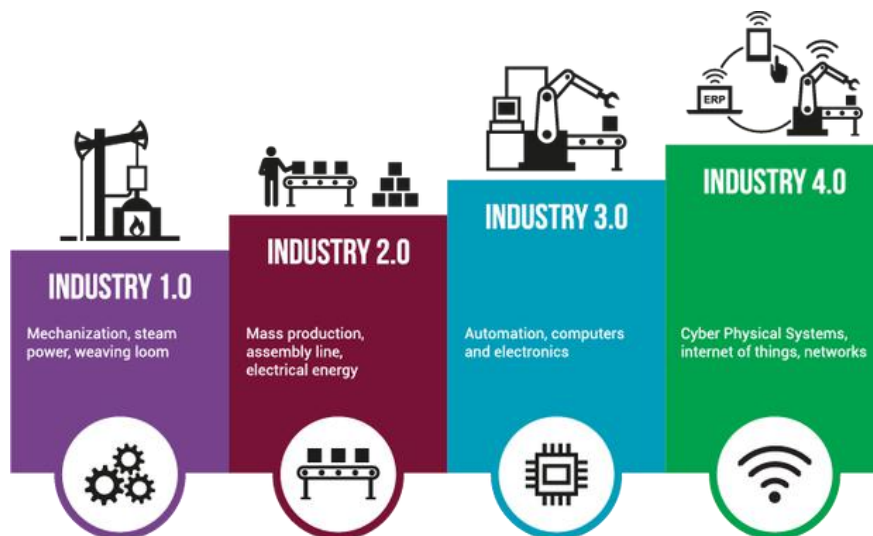
www.etchrobot.com

The Next Big Thing - Industry 4.0

Over the last 3 centuries, the world has undergone 3 major Industrial Revolutions

1. The First one due to the mass extraction of coal leading to the invention of first generation machinery & thus the steam engine revolution.
2. The Second one due to the invention of Electrical, Gas & Oil Energy, leading to Mass Manufacturing.
3. The Third one due to the invention of transistors leading to Computers & thus the Digital Revolution.

As you read this, the world is witnessing the start of a 4th major industrial revolution; primarily focused towards Smart Factories, which will be built of Cyber Physical Systems - a tightly integrated physical-digital interface consisting of Additive Manufacturing, IoT, Cloud & Cognitive Computing.



This revolution is expected to happen over the next 5 decades and is projected to be a Multi-Trillion Dollar Market. Organizations Worldwide are preparing themselves towards this revolution.

Are you up for this revolution?

The Problem?

Having been in the Education Sector, we have observed a huge gap in the Educational Curriculum vs the core Industrial Needs. A result of this is that the vast majority of the students today are not equipped for what the industry actually needs. One such is 3D Printing.

According to IEEE, 35% of Engineering Jobs today require 3D Printing Skills,

..but unfortunately, 3D Printing is nowhere part of the major curriculum today. One attempt by Etechrobot has been to educate the modern generation of students with where our expertise lies - 3D Printing, a Technology that every industry requires, let it be Arts, Electronics, Manufacturing, Biotech, Construction, AeroSpace.

As part of the same, Etechrobot has been organizing 3D Printing Workshops around the country. The content has been curated heavily to impart the basics in the exact amount required. Being the category leader in the industry, the content of the event is updated to as latest as yesterday; and these sessions have grown so popular that the rate of organizing has been almost one every week lately.

Overview

The proposed event is a Six-Day 3D Printing Workshop covering the basics of 3D Printing, 3D Scanning & related topics with some engaging hands-on sessions in between. The takeaway would be a high level overview of 3D Printing and the right amount of technical aspects to get started with 3D Printing.

The workshop would cover a complete cycle of processes from Scanning or Designing an object to 3D Printing it, with technical details to all stages in between. [*A detailed agenda of the event follows next.*]

Agenda

→ Intro

Day 1

- Overview
- Why 3D Printing?
- History
- Additive Manufacturing
- Market Size

→ Applications in Various Industries

Day 1

- Architecture & Construction
- Defense, Automotive & Aerospace
- Apparel, Domestic & Consumer Applications
- Education & Research
- Product Engineering, Industrial Design & Robotics
- Art, Fashion & Jewelry
- Food Tech
- Dental, Healthcare & Biomedical
- Rapid Prototyping, Moulding, Manufacturing & Mass Customization

→ Scanning & 3D Pen

Day 2

- What is 3D Scanning?
- How to 3D Scan with a Smart Phone? - *Demo*
- How to Use 3D Pen for Art & Crafts- *Demo & Hands on*
- Scanning using a Smart Phone App Scanner - *Demo*
- Reverse Engineering

→ Design

Day 3

- Intro to 3D Modeling Software
- Designing basic geometry - Cube, Cuboid, Sphere, Cone, Keychain with Name etc - *Hands on*
- A mini project - Designing a custom item - *Hands on*
- Solid Works - *Demo / Video Demo*
- Exploring Various 3D Printable File Formats

(continued..)

→ Slicing

Day 4

- Configuring an 3D Printer - *Hands on*
- Understanding Various Print Parameters
 - Resolution, Density, Speed, Strength, Supports etc.
- Trying Different parameters on a specific Design file - *Hands on*
- Trying Different Design files - *Hands on*
- Exporting into a machine readable file format & 3D Printing - *Demo*

→ Types of Industrial 3D Printers

Day 5

- FDM/FFF - Filament based Domestic 3D Printers - *Video Demo & Hands On*
- SLA/DLP - High-resolution 3D Printers for Healthcare & Jewelry - *Video Demo & Hands On*
- SLS/DMLS - Industry Grade Powder based Plastic / Metal 3D Printers - *Video Demo*
- CJP/Z Printers - Full Color 3D Printers for Gifting & Architecture - *Video Demo*
- Polyjet/Multijet Production Grade Multi Material 3D Printing - *Video Demo*

→ 3D Printing Complex Design & Post Processing

Day 6

- Chemical/UV Treatments- *Video Demo*
- 3D Printing Complex Design like Taj Mahal etc.
- Support Removals

→ Q&A & REVIEW

Day 6

3D Printing Credits

During the course of the event, it would not be practically feasible to 3D Print every attendee's custom design. In order to complete the learning cycle of Design to 3D Print and get a tangible object in the attendees' hands, we encourage attendees to take upto a week, improve their design skills, and send us a 3D Printable design file.

Post Event, each attendee gets a three hour worth of free 3D Printing Credit which can be used to 3D Print their design and would be shipped back to attendee address.

Resource Bundle

- An **FDM/FFF 3D Printer** for Demo
- An **SLA/DLP 3D Printer** for Demo
- 3D Scanner Mobile Application for Demo
- Various 3D Printed Models for Demo
- Various 3D Printing Materials for Demo
- Software Bundle - 3D Printing Software for Demo

Requirements from Attendees

- A Notebook and Pen. (1 Set would be Provided by EtechRobot)
- If attendee has a laptop, it will help him/her in to better understand 3D Printing Software.
- Basic Knowledge of Windows Operating.
- If Carrying a Laptop, please carry a Mouse.

What Attendees Will Get

- **Custom 3D Model worth 750 INR (3 Hours) Max 2 Design**
- **3D Printing Workshop Certificate (Valid for 1 Year)**
- Digital Certificate would be Emailed to the attendee Email ID.
- PPT of the Session will be emailed to the attendees post the event.

Other info

- The agenda mentioned is for an open audience. Kindly note that the agenda might be slightly tweaked during the event depending on the interests of the attendees.
- In case of a specific set of similar audience (e.g. Architecture domain attendees only who already know sketchup or Mechanical domain attendees only who are already proficient with CAD), the host could update us upfront so that the content could be curated further to maximise the learning.

About the Company

EtechRobot is a leading service provider in the field of establishing Tinkering Labs, Smart Classrooms & Robotics workshops for school & college students.

It is also a one-stop destination for all Electronics, Robotics, Mechanical & Engineering products. Our team comes with several years of industry experience and comprise of a highly motivated set of specialists & industry experts.

Recently EtechRobot has been Recognized in the National Startup Awards 2020 Finalist and to be only from Madhya Pradesh & Rajasthan to Secure place in Education Sector.



#startupindia

A **DPIIT** (Department for Promotion of Industry & Internal Trade)
Recognized Startup

 **National
STARTUP
Awards 2020**
Finalist

 **ACCREDITATION
BOARD FOR
CERTIFICATION
BODIES**

 **ISO 9001:2015
Certified Company**

Did you know that..



.. geometries impossible to be made previously are now being manufactured with 3D Printing.

.. Boeing is saving 3 Million Dollars per aircraft in 2017 by shifting to 3D Printed Titanium parts.

.. Complex Surgeries are being rehearsed with 3D Printed mocks created from the 3D Scans of the Patients.



.. all future constructions (even outside earth) would be 3D Printed..

.. All Space Travel would rely on 3D Printed Spare Parts, Custom 3D Printable food etc