

Abstract

Opening multiple avenues of exploration, three-dimensional (3D) printing helps you realise all your ideas into tangible products. 3D printing -- also known as additive manufacturing -- turns digital 3D models into solid objects by building them in layers. It is one of the most amazing rapid prototyping techniques ever. 3D printing has so many multi-disciplinary applications in the field of Education, Design, Architecture, Manufacturing etc.

Methodology

The course will follow a complete hands-on approach wherein students will be learning to take their ideas from a mere thought to digital design and then a physical prototype. The students will be learning design software to bring alive their ideas and how-to-use a 3D printer to print them in 3D.

Academic Concept

This course will help students understand how 3D printing is applied across a number of domains, including design, manufacturing, and retailing.

- It will also demonstrate the special capabilities of 3D printing such as customisation, self-assembly, and the ability to print complex objects
- In addition to business applications, this course will also examine how individuals, students including those in developing countries, are using this technology to create solutions to the everyday challenges they face
- This course will also provide an overview of design thinking and how you can use this framework to develop ideas that can be turned into objects.
- This course offers a rich understanding of the capabilities of 3D printing and how to think about designing objects for this new technology.

Learning Outcome

At the end of this module, students will be able to:

- Understand 3D printing technology
- Understand the working and construction of 3D printing machine and 3D Pen
- Learn about applications of 3D printing and independently use 3D design software to make 3D models of their ideas
- Convert the 3D prototypes to product finish models through post-processing

Tangible Outcome

Students will be converting their ideas into physical prototypes that would range from name tags to architecture models, furniture replicas and functional prototypes.

Recommended for

This course is meant for students, hobbyists, designers and engineers interested in exploring 3D printing and fabrication.

Instructor



Prem Sagar, Founder and CEO, Banaao - A Makers Playground Visiting Faculty, Pearl Academy BE., Instrumentation and Control Engineering, NSIT (Delhi University) An engineer by qualification, he is an avid geek and is always keen to solve problems by using hardware technologies. He is a full-time Maker and Manager and is the founder of Gurugram's first Makerspace, Banaao- A Makers Playground, which is a multi-disciplinary innovation lab for people of all ages. His keen interest lies in democratising the access to technology. Tinkering since childhood, he has made numerous prototypes and projects in the fields of electronics, mechanical, solar etc. and has conducted multiple national and international workshops.

