**Welcome to FabLab**

# **Hello,** What is a Fab-Lab?

Fab Lab - Digital Fabrication Laboratory, is a place where anyone can make (almost) anything, using digital design, 3D printers, laser cutting and other advanced technological means.

In its essence, Fab-Lab is about turning ideas into a reality. All planning, design, production and fabrication processes are done in one place, to create one unique product. All you need to bring with you is an idea, and MadaTech’s Fab-Lab supplies the tools and the guidance to bring it to fruition.

In the “old world”, production was thought of as something that is done only by professionals. Factories were seen as busy, dangerous places for the inexperienced. Most of all, each product was duplicated by hundreds, if not thousands.

At the Wanger Family Fab Lab, production is a personal process. Modern tools enable individuals to turn their ideas into reality, even downloading products from the internet and personalizing them, whether as an original gift for a loved-one, or as a prosthetic for the disabled.

**About Us**

Fab Lab Bhubaneswar has been established by the Software Technology Parks of India (STPI) in its new state of the art building STPI Elite at Gothapatna, Bhubaneswar. The total outlay for the Fab Lab is Rs.300 lakhs with equal contribution of funds by the Ministry of Electronics and IT (MeitY), Government of India and the Department of Electronics and IT (DE&IT), Government of Odisha. The lab occupies a dedicated space of about 1500 sft in the 1st floor of the building.

Fab Lab is a technical prototyping platform for learning, innovation and invention: a place to play, to create, to learn, to mentor and to invent for local entrepreneurs. It could be described as a sophisticated medium scale workshop for digital fabrication empowering users to design and build smart devices tailored to specific local or personal needs.

The Fab Lab is connected to a network of more than 100 similar labs of different sizes and capacities spread across 30 countries and 24 different time zones across the globe. Therefore, it connects the local entrepreneurs and makers to a global community of learners, educators, technologists, researchers and innovators thereby seamlessly sharing knowledge, skill and best practices. Since all Fab Labs share common tools and processes, the global network is indeed a distributed laboratory for research and invention.

STPI signed an agreement in June 2018 with Fab Foundation, a US non-profit organization that emerged (in 2009) from MIT’s Center for Bits & Atoms Fab Lab Program for establishing a Fabrication Laboratory in Bhubaneswar, Odisha.

The Fab Lab has the following facilities:

* Laser Cutter
* Large Scale CNC Mill: Shopbot
* 3D printers: Dimension SST 3D printer and Ultimaker 2
* High Resolution Mini NC Mill: Modela
* Vinyl Plotter
* Sand Blaster
* Electronic Components and Tools
* Molding and Casting
* Electronics Test Equipments
* Computers

(**(each item above should be linked to an appropriate page which has high resolution snaps of the machine/equipment from different angles, its specifications and a note on its usage)** )

More about Fab Lab and Fab Lab Program: Originally designed for communities as prototyping platforms for local entrepreneurship, Fab Labs are increasingly being adopted by schools as platforms for project-based, hands-on STEM (Science, Technology, Engineering and Mathematics) education. Users learn by designing and creating objects of personal interest. Empowered by the experience of making something themselves, they both learn and mentor each other, gaining deep knowledge about the machines, the materials, the design process, and the engineering that goes into invention and innovation.

As support for advanced technical education and to provide training for new Fab Lab managers, Fab Academy, an internationally distributed campus for technical education, has emerged from the Fab Lab program. The Fab Academy provides instruction and supervises investigation of mechanisms, applications, and implications of digital fabrication.

Fab Labs are closely aligned with MIT’s Center for Bits & Atoms (CBA) where research into next generation tools and software, as well as fabrication work flows and processes is pushing up against digital-analog boundaries. CBA is charting a research road map that traverses the frontier of digital fabrication: from machines in a Fab Lab that make things, to machines that make parts of machines, to machines that self-reproduce, to building with digital materials, to materials that are programmable and can turn themselves into parts. Knowledge and best practices are disseminated throughout the Fab Lab network, making it a cutting edge laboratory for R&D.

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**Who is Fab-Lab for?**

Fab-Lab enables anyone at any age, to experiment in turning ideas to tangible reality.

Fab-Lab is looking for “makers” – for whom “do-it-yourself” is a motto: from curious children who take things apart only to put them back together; hobbyists who love robots, model airplanes, model building, photography and more; professionals who love to do-it-themselves; artists; innovators in spirit and in occupation and any other individuals, young and old, who would like to “make” and would like to share from their experiences.

Whether conceptual artists or “technology geeks”, school age children or university students, young or old, men or women – the Wanger Family Fab-Lab is available for anyone who has the passion to “make”.

# What Is A Fab Lab?

* [Home](http://www.fabfoundation.org/index.html)
* What Is A Fab Lab?

Fab Lab is the educational outreach component of MIT’s Center for Bits and Atoms (CBA), an extension of its research into digital fabrication and computation. A Fab Lab is a technical prototyping platform for innovation and invention, providing stimulus for local entrepreneurship. A Fab Lab is also a platform for learning and innovation: a place to play, to create, to learn, to mentor, to invent. To be a Fab Lab means connecting to a global community of learners, educators, technologists, researchers, makers and innovators- -a knowledge sharing network that spans 30 countries and 24 time zones. Because all Fab Labs share common tools and processes, the program is building a global network, a distributed laboratory for research and invention.

A Fab Lab is comprised of off-the-shelf, industrial-grade fabrication and electronics tools, wrapped in open source software and programs written by researchers at MIT’s Center for Bits & Atoms. Currently Fab Labs include a laser cutter that makes 2D and 3D structures, a sign cutter that plots in copper to make antennas and flex circuits, a high-resolution NC milling machine that makes circuit boards and precision parts, a large wood router for building furniture and housing, and a suite of electronic components and programming tools for low-cost, high-speed microcontrollers for on-site rapid circuit prototyping. Originally designed for communities as prototyping platforms for local entrepreneurship, Fab Labs are increasingly being adopted by schools as platforms for project-based, hands-on STEM education. Users learn by designing and creating objects of personal interest or import. Empowered by the experience of making something themselves, they both learn and mentor each other, gaining deep knowledge about the machines, the materials, the design process, and the engineering that goes into invention and innovation. In educational settings, rather than relying on a fixed curriculum, learning happens in an authentic, engaging, personal context, one in which students go through a cycle of imagination, design, prototyping, reflection, and iteration as they find solutions to challenges or bring their ideas to life.

As support for advanced technical education and to provide a training path for new fab lab managers, Fab Academy , an internationally distributed campus for technical education, has emerged from the Fab Lab program. The Fab Academy provides instruction and supervises investigation of mechanisms, applications, and implications of digital fabrication.

In addition to Fab Academy, [SCOPES-DF](https://www.scopesdf.org), fueled by collaboration and community, has the power to transform STEM learning in diverse educational settings through digital fabrication technologies and practices found in a Fab Lab or makerspace. We are building curricular frameworks, professional development resources, and evaluation tools around digital fabrication that can catalyze STEM learning in the classroom. This new platform will enable fabbers, makers and educators to collaborate and interact in a Community of Practice and promises to expand STEM learning and teaching in fresh new ways. Each partner in this collaboration comes with an essential, yet distinct, perspective. Together, they can ignite student learning!

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