



## **FAB LAB**

Fab lab is a Digital Fabrication facility with set of machines and software for directly converting CAD designs to physical parts. The idea of FAB LAB was conceptualized in the Centre for Bits and Atoms (CBA) group at MIT. MIT is recommending every Engineering Institution to have a FAB LAB facility as this will be great tool to foster innovation.

### **Advantages of FAB Lab to College & Students:**

- Complete digital fabrication facility (convert designs into physical prototypes & models)
- Useful for fabricating prototypes for student, academic & research projects.
- Useful for all Engineering departments in the college.
- Can be used for curriculum training of various courses like CAD/CAM lab, mechatronics lab, metrology lab etc.
- Get recognised by MIT in their website and become part of a global network of recognised fab labs.
- Offer vocational and manufacturing skill development training programmes to students & professionals.
- Offer consultancy services on digital fabrication to Industries.

### **Equipments in Fab Lab:**

#### **Basic : Laser, Router, Lathe, 3D Printer, PLC Controller kit for Automation**

- A computer controlled laser cutter , for press-fit assembly of 3D structures from 2D parts.
- A larger numerically controlled milling machine, for making furniture – (and house-) sized parts
- Rapid prototyper : typically a 3D printer of plastic or plaster parts.
- A precision (micron resolution) milling machine to make three – dimensional molds and surface mount circuit boards
- A sign cutter , to produce printing masks, flexible circuits , and antennas
- Programming tools for low cost high speed embedded processors

#### **Advanced Set of Equipments:**

- **CNC gas and Plasma Cutting Machine**
- **CNC Milling Machine**
- **CNC Lathe**
- **CMM**



## **Introduction:**

With a vision to ‘Cultivate one Million children in India as Neoteric Innovalors’. Atal Innovation Mission is establishing Atal Tinkering Laboratories (ATLs) in schools across India. The objective of this scheme is to foster curiosity, creativity, and imagination in young minds, and inculcate skills such as design mindset, computational thinking. Adaptive learning, physical computing etc.

ATL is a workspace where young minds can give shape to their ideas through hands on do-it-yourself mode; and learn innovation skills. Young children will get a chance to work with tools and equipment to understand the concepts of STEM (Science, Technology, Engineering and Math) ATL would contain educational and learning do it yourself kits and equipment on – science, electronics, robotics, open-source microcontroller boards, sensors and 3D printers and computers. Other desirable facilities include meeting rooms and video conferencing facility.

In order to foster inventiveness among students, ATL can conduct different activities ranging from regional and national level competitions, exhibitions, workshops on problem solving, designing and fabrication of products, lecture series etc. at periodic intervals.

## **ATL Objectives**

1. To create workspaces where young minds can team innovation skills, sculpt ideas through hands on activities, work and learn in a flexible environment.
2. To empower our youth with the 21 century skills of creativity, innovation, critical thinking, design thinking, social and cross cultural collaboration ethical leadership and so on.
3. To help build innovative solutions for India’s unique problems and thereby support india’s efforts to grow as a knowledge economy.



College Code:7Q

# BRILLIANT GRAMMAR SCHOOL EDUCATIONAL SOCIETY'S GROUP OF INSTITUTIONS - INTEGRATED CAMPUS

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