

Koneru Lakshmaiah Education Foundation
Department of Mechanical Engineering
FAB LAB

The KL University Fab Lab, or digital fabrication laboratory, is a space for learning and creativity where people may play, create, mentor, and develop.

Fab Labs give everyone everywhere access to the environment, the tools, the materials, and the cutting-edge technology needed to produce (nearly) anything.



Equipment In Digital FAB Lab @ KL – Department of Mechanical Engineering

1. Flame and Gas CNC Plasma Cutter

Model: Intecut-S Flame and Gas CNC Plasma Cutter



High strength, hardness alloy frame works Axis cored sliding way are applied on X-beam and Y-rails High gantry is used for easily feeding plate and unloading workpieces CNC is with 7" colourful displayer and interfaces, English, Russian, Spanish, Portuguese, French, Danish, Korean, Chinese, Thai languages. 44 shapes in CNC library. It is easy for user to choose and set parameters. Functions for both flame cutting and plasma cutting. Program are built in for improving cutting quality, includes speed, pierce time, pulse, motions, etc. Easy exchanging between flame and plasma cutting models USB port for downloading / adding drawings Compatible for nesting software, FastCAM, MTC, Turbonest, etc. Drawings from AUTOCAD, TEKLA and SOLIDWORKS are easily used

Categories: Plasma Cutting Machines, Welding Equipment

2. CNC Slant Bed Lathe → Model: Bhavya CKE 6126L



Slant bed CNC Turning Centre is a high speed production lathe that has a high precision and a bi-directional indexing turret. The eight station tool turret increases the production efficiency and decreases waste. The guide ways are also developed in a way to ensure accuracy and high level of feed as well as cutting speeds. The 45 degree slant bed CNC turning centre feature of the bed enhances the accuracy of operation and machine stability. The spindle structure is also designed and mounted in such a way as to prevent deformation of the work piece.

3. Automatic CNC Router Machine → Model: CNC Router 1325



A **computer numerical control (CNC) router** is a computer-controlled cutting machine which typically mounts a hand-held router as a spindle which is used for cutting various materials, such as wood, composites, metals, plastics, glass, and foams. CNC routers can perform the tasks of many carpentry shop machines such as the panel saw, the spindle moulder, and the boring machine.

4. CO₂ Laser Cutting Engraving Machine, Laser Engraving Machine

Model: Marksys Integrators EC 13.26



CO₂ Laser cutting machines by Prakash offers a wide variety of cutting options on different types of materials like acrylic, leather, wood, fabric, plastic etc with high speed and accuracy. Cutting and engraving through laser is a non-contact process which results in high quality product with a freedom to create complex designs. Some of its well known applications are in fabric industry, leather industry, shoe industry, acrylic cutting, Pen engraving industry etc. By the means of laser cutting machine you can also engrave the same product at the same time with a little change in power setting. Prakash, being one of the best laser cutting machine manufacturers can provide you with the most feasible solution according to your industry both in terms of machine price and quality.

5. CNC Milling Machine → Model: Bhavya XK7124A



CNC Machining Center - Slant Bed Turn Mill Centre, Drilling & Tapping, Horizontal Machining Centre

The available models for CNC Machining Center include DL – MH series and the TD Series for drilling and tapping centers. The CNC machines are able to guarantee long term reliability and efficiency through sturdy construction, high quality manufacturing material and automatic lubrication systems. The CNC machines are also equipped with automatic tool length setters that ensure all measurements during production are highly accurate and there is no material wastage. The machining centers are also equipped with programmable logic control systems as well as automatic memory system that avoid repeated calibrations when similar work pieces are being operated. The equipment can also accommodate a wide variety of spindles required during the different operations.

6. Bhavya Vertical Turret Milling Machine

Model: Bhavya M3



Salient Features:

- Rectangle table guideway with high stability
- Hardened and ground table surface
- Automatic feeds on x.y.axis motorized lifting and lowering of table on z axis

All the turret mill models are equipped with rectangle table guide way with high stability and it contains hardened and ground table surface. Work material feed is possible on automatic basis over x and y axis and towards z axis it is done through motorized lifting.

7. Power Band Saw

Model: Bhavya BS-912GR



Horizontal swing arm bandsaw machine is highly durable with good functionality & performance, and also has high corrosion resistance. It consists of directly coupled geared motor with high efficiency power transmission. The blade of the bandsaw machine can be precisely been set depending upon the material been used. It is also movable so as to get the precise cutting that gives desired result. Some if the features of swing arm bandsaw machine is requiring low maintenance, sturdy structure as well as perfect finish for getting desired result.

8. Vinyl Cutter → Model: RS 720C



Electronics

- Create acid resist patterns for your custom PCBs, and then add “silkscreen” labels.
- Use a conductive pen to plot a circuit in low-resistance silver.
- Cut thin foil traces, PCB layers, and RFF interference protection for your paper circuits.
- Create your own DIY sticker circuits, from blinking “LED stickies” to handy ad-hoc breakouts for your Arduino or Raspberry Pi prototyping.

Woodworking, Craft, and Painting

- Create and place trim markers on plywood, MDF, acrylic, or hardwoods on-site where the project will be delivered, and then transport the materials to a better-furnished woodshop for cutting, sanding, and painting.
- Create edge boundaries and resist patterns to take some of the terror out of painting, staining, and coating.

9. High Precision Hydraulic Surface Grinder

Model: M7125A



One of the major benefits of utilizing our hydraulic surface grinder is that it has the capability to ground any metal/material from the surface area so that the entire grinding process is executed properly without any kind of errors or mishaps. Another benefit of hydraulic surface grinding machine is that industries can receive by using our hydraulic grinding is power-saving and hydraulics loaded features that are 2 of the important features for the grinding process. Numerous other benefits like the energy-saving capacity and easy operative mechanism of the machine are some other beneficial aspects that our grinding machine has.

10. Drilling & Milling Machine (Auto Feed)

Model: Bhavya ZAY7045FG/1



Special features

- Belt – driven and round column
- Milling, drilling, tapping, boring and roaming
- Headstock swivels $\pm 90^\circ$ vertically
- Micro feed precision
- Adjustable gibs on table precision
- Strong rigidity power cutting and precise positioning.

Lab Incharge

Head of the Department