**Introduction to Machine Tools & Machining Lab and Draw Layout of Lab**

**Introduction:**

Machining is the process of using cutting tools to remove some amount of a piece of material (metal, wood, plastics, ceramic, etc.) to precisely shape it for an intended use. This use of the physical action of cutting tools is also known as subtractive manufacturing.

The primary machines used in machining are

* Lathe (metal lathe)
* Milling machine
* Drill press
* Abrasive grinders.
* Shaper machine

Other machines can be either manual or automated. Most automated machines have CNC (computer numerical control) and are capable of producing very intricate, precise, and complex parts with a high degree of repeatable accuracy for any number of applications.



The material removal processes are a family of shaping operations in which excess material is removed from a starting work part so that what remains is the desired final geometry. The ‘‘family tree’’ is shown in Figure.

The most important branch of the family is

**Conventional Machining**

**Abrasive processes**

**Non-Conventional Machining**

**Lathe Machine**

**Shaper Machine**

**Drill Machine**

**Milling Machine**

**Shaper Machine**