The router is a simple, versatile, relatively safe, portable electric tool. The router consists mainly of two parts; a motor with a collet mounted on one end of the motor shaft and a base which holds the motor. A bit or cutter is mounted in the collet and protrudes below the surface of the base to do the cutting. The depth of the cut can be adjusted by moving the motor up or down inside the base and locking it at the desired depth setting. Routers run at speeds up to about 22,000 rpm. There are two basic types of routers, fixed-base and plunge. With a fixed base router, the motor is adjusted in the base for a given depth of cut and locked in place. With a plunge router, the motor can be slid up and down within the base while the motor is running. The following rules must be followed when using a router:

- Only use accessories designed to operate in high speed routers.
- Always disconnect the plug from the electrical outlet before changing bits or making adjustments. This also applies to special set-ups where the router is mounted in a table.
- Make sure the bit is firmly secured in the chuck before starting work.
- Make sure the router motor is secured to the router base before the power is turned on.
- When starting the router, make sure the bit is not in contact with the work.
- Hold the router firmly when turning the power on to overcome the starting torque of the motor.
- Keep hands and loose clothing away from revolving bits and cutters.
- Operate router in the proper direction, e.g., into or against cutter rotation.
- Do not overload or “bog down” the speed of the router.
- Make several light cuts where large amounts of material are to be removed.
- Always make sure the bit is sharp. If unsure, check with the instructor. Never use a dull bit.
- At least ½” of the router bit shank must be in the collets.
- The work to be routed must be securely clamped or otherwise secured.
- When using multi-piece router bits, double check to make sure that all nuts and bearings are tightened properly.