



**SHAPER MACHINE**

Heavy Duty Shaper machine- Table size-380mm X 750mm, and Maximum stroke length 600mm

Category: Service Units

Courses: NA

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**CENTER LATHE**

High precision lathe machine used for manufacturing test specimens, research related activities, and teaching

Category: Service Units

Courses: NA

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**RADIAL DRILLING MACHINE**

Heavy Duty Drilling Machine, used for heavy drilling ,boring counter boring etc, this machine is equipped with a rotary headstock assembly.

Category: Service Units

Courses: NA

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**TOOL AND CUTTER GRINDER**

This machine is used for resharpening milling cutters and drills and cutting tools

Category: Service Units

Courses: NA

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**Hydraulic surface grinding machine**

The Hydraulic Surface Grinding Machine has a maximum working dimensions involving table size of 400 x 800mm, longitudinal travel of 875mm, cross transverse of 450mm, spindle center height above table of 550mm and table speeds of 18m/min

Category: Auxilliary

Courses: NA

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**CNC Vertical Machining Center Machine**

The DMU 50 five-axis machine is the perfect machine for those entering into five-axis simultaneous machining. It features a performance-enhancing NC swivel rotary table, high rigidity, a large bearing diameter in the B- and C-axis, plus a load weight of 661.4 lbs.

Category: Auxilliary

Courses: NA

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**LATHE TOOL DYNAMOMETER**

Measuring cutting forces in machining

Category: Measuring Equipment

Courses: NA



**Injection Moulding Machine**

It is used for making thermoplastic & thermosetting components on large scale automatically or manually. It has a capacity of 570 tons with completely computerized controlled operations to manufacture plastic parts.

Category: Service Units

Courses: NA

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**CNC Lathe Machine**

Vantage 800 CNC turning machine with 1.2 m distance between centers and 40 mm bore diameter

Category: Auxilliary

Courses: NA

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**Lathe Machine**

Lathe machine rotate a parts against a tool whose position it controls, it is used for fabricating parts having a circular cross section. All types of precision machining such as:- turning, drilling, boring, thread cutting can be performed. Lathe machine consisting of various work holding devices, and attachment. The spindle is driven by an electric motor through belt drives/ or by gear trains. The distance between center is 1500mm, and swing over bed is 230mm.

Category:

Courses: Manufacturing Processes

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**Universal Horizontal Milling machine**

Milling machines are used to remove material by a fast rotating multiple edge cutting tool called cutter. Horizontal milling machine is consisting of different attachment and accessories for cutting all types of gears, slots, angular surfaces, all types of key-ways, T- slots. The work table length is 1500mm x width is 300mm.

Category: Service Units

Courses: Manufacturing Processes

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**Universal Vertical Milling machine**

Milling machines are used to remove material by a fast rotating multiple cutting edge tool called cutter, and the machine consisting of different attachment and accessories for different operations. Milling machine can produce all types of gears, slots, grooves, angular surfaces, T- slots, and key-ways. The machine worktable length is 1500mm x 300mm width.

Category: Service Units

Courses: Manufacturing Processes

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**Torsion Testing Machine (New)**

It is designed and built for torsion test on metal & non-metal materials, as well as parts & components. It is an essential instrument to inspect torsion properties of materials in mechanics laboratories of aviation industry, scientific research department, universities & industrial enterprises. The testing machine adopts PC-Controlled AC servo system & is loaded through the rotation of the active cartridge driven by the AC servo motor and cyclonical pinwheel reducer motor. The torque and torsion angle are measured with high-precision torque transducer & photoelectric encoder. All the test operation can be completed by software installed in computer

Category: Teaching Equipment

Courses: Manufacturing Processes, Material Science



### Upright Drilling Machine

Drilling machines are used to make holes to the work piece by a rotating cutting tool called twist drill, which can be directly fit to the spindle. Boring, reaming, counter boring, counter sinking, tapping can also performed on this machine, and the maximum drilling capacity is 50mm

Category:

Courses: Manufacturing Processes

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### Rotating Fatigue Machine (New)

This machine has a motor that rotates a driven end of a test specimen under constant load (stress) via coupling & collet. An adjustable dead weight is applied at the loading end of the specimen. A sensor counts the rotations (cycles) of the specimen and a load cell measures the applied force. VDAS is used for automatic data acquisition & to determine fatigue properties of metals i.e. time to failure from the cycle count and the cycle rate.

Category: Teaching Equipment

Courses: Manufacturing Processes, Failure Analysis, Material Science

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### Horizontal Shaping machine

Horizontal shaper produces flat surfaces with a single point cutting tool, which is mounted to the reciprocating ram. The work can be clamped to the work table/ or to the machine vice and the tool is feeding towards work. All types of flat surfaces, angular surfaces, slots, key-ways can be performed on a horizontal shaper, and the maximum stroke length is 450mm.

Category: Service Units

Courses: Manufacturing Processes

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### Impact Testing Machine ( Metals)

This machine is designed for the Charpy impact testing of metals in accordance with ASTM-E23. The machine is equipped with a 300J tup suitable for Charpy testing. On this manually operated machine, the pendulum is lifted physically to the start position. A pendulum release lever and a safety lock lever, which prevents accidental release, are fitted to the release box. Wedge clamps are provided for holding the test piece support blocks rigid. A stop is fitted on the base to support the tup when carrying out adjustments or tool changeovers

Category: Teaching Equipment

Courses: Failure Analysis, Material Science

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### Universal Sheet & Strip Metal Testing Machine

This machine is designed for performing Erichsen and deep drawing cupping test of metals. The machine is equipped with a die and a punch which moves upwards to form the cup. Punch is operated by drawing speed selector which is used for varying the speed. Holding, blanking & drawing force is measured by the dial indicators fitted on the control panel of the machine.

Category: Teaching Equipment

Courses: Manufacturing Processes, Failure Analysis, Material Science

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### Optical Profile Projector

Optical profile projector used to enlarge part in to magnification X5, X10, X20, X25, X50, X100, X200. 4 lenses turret fixed and the protractor screen diameter is 500mm and electronic readout in inch and metric 0.0001" and 0.002mm

Category:

Courses: Manufacturing Processes

Faculty In Charge: Dr. Elsadig Saad

Teaching Assistant In Charge: Eng. Samahat Samim

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## Plastic Molding Machine

This machine has a capacity of 200 kN available for 30g shot weight injection moulding. The machine provides side injection & is fitted with regulators for controlling temperature. All machine movements are controlled by control console on the hydraulic power pack. Hydraulic cylinder and ram assemblies provide for injection moulding along the split line. The press is fitted with a bolster with bottom ejection and electric heating and thermometers in both top and bottom. The injection cylinder has multi-zone electric heating by heaters, and thermometer is provided for these cylinders.

Category: Teaching Equipment

Courses: Manufacturing Processes, Failure Analysis, Material Science

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## Tool Makers Microscope

To find out tool wear and measuring the are of flank wear portion  
A measuring stage with built-in 360 degree plate and magnification 10x, 30x, 50x

Category:

Courses: Manufacturing Processes

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## Granite Surface Plate

Granite surface plate is used for lay out operations and taking precision measurements by using measuring instrument. The surface plate size- is 1500mm x 1200mm.

Category:

Courses: Manufacturing Processes

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## Metric Rectangular Gauge Block

Gauge blocks are used for calibration and measurement.  
Grade 2 (A+) Brown & Sharp ( Total 88 blocks)

Category:

Courses: Manufacturing Processes

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## Rectangular Gauge block (Inch standard)

Gauge blocks are used for calibration and measurement.  
Grade 2 (A+) Brown & sharp, precision certified total 81 block.

Category: Measuring Equipment

Courses: Manufacturing Processes

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## Lathe Machine

Solid Bed type, Distance between center 1000mm

Category: Service Units

Courses: Manufacturing Processes



**Filament winding machine**

Filament winding is a technique primarily used to manufacture hollow, circular, or prismatic parts such as pipes and tanks. It is performed by winding continuous fiber tows onto a rotating mandrel.

Category:

Courses: Manufacturing Processes

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**Water Jet machine**

A water jet machine is an industrial tool that uses a high-pressure water jet to cut various materials. It can use water alone to cut soft materials like wood and rubber, or the water can be mixed with an abrasive substance (like garnet or aluminum oxide) to cut harder materials.

Category:

Courses: Manufacturing Processes

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**Laser cutting machine:**

The laser cutting machine uses the laser beam, the beam determines wavelength and power, therefore determines the material that it can cut or engrave. There are three main types of lasers used in laser cutting, solid-state laser, fiber laser, and CO2 laser.

Category:

Courses: Manufacturing Processes

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**Electro discharge machine:**

Electrical discharge machining (EDM) is a non-traditional form of precision machining that uses thermal energy instead of mechanical force to remove material from a workpiece. It is sometimes referred to as Spark Machining since it utilizes electrical sparks.

Category:

Courses: Manufacturing Processes

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**Power hacksaw:**

Power hacksaws are used to cut large sizes (sections) of metals such as steel. Cutting diameters of more than 10/15mm is very hard work with a normal hand held hacksaw. Therefore power hacksaws have been developed to carry out the difficult and time consuming work.

Category:

Courses: Manufacturing Processes

Courses: Manufacturing Processes