

Introduction to Metal Machining

Applying for this course:

To apply for this course, you should have completed compulsory schooling.

Course Duration

This course is of 30 hours duration.

General pedagogical guidelines and procedures for this course:

The delivery of this course will be mainly held through workshop sessions.

The learner will not be assessed at the end of the course and will be eligible for a Confirmation of Attendance indicating the hours attended.

Topics to be covered:

Safety in operating centre lathes and milling machines, protective wear and machine safety.

Centre lathes

Turning processes which include but are not limited to: facing, turning, taper turning, external thread cutting, centre drilling, knurling, recessing and chamfering.

Tool and work holding procedures on a centre lathe.

Turning parameters: cutting speeds for different types of materials, feed rates, depth of cuts and spindle speeds to be chosen according to the different processes and materials (workpiece and tool).

Use of charts to find various spindle speeds.

Types of turning tools, such as: facing, turning (rough and finishing), recessing, boring, knurling, chamfering, thread cutting (internal and external).

Milling machines

Milling processes which include but are not limited to: facing, end milling, groove milling, slot milling, vertical and horizontal faces.

Turning parameters on milling machines: cutting speeds, feed rates, depth of cut and spindle speeds chosen for different cutting conditions and materials.

Types of milling tools, such as: end mills, slot drills, roughing and finishing tools, etc.

Tool and work holding procedures on a milling machine.

Measuring instruments

Thorough knowledge on how to use various measuring instruments, such as Vernier calipers, Metric micrometers and Vernier height gauge required to obtain precise measurements and accuracy on the above mentioned machines.