



## Mechanical Testing Laboratory 'Performing a Tensile Test to Metallic Materials'

You will be given a plain carbon steel specimen in the laboratory. Measure the followings;

Initial diameter, $d_o$	.....mm
Gauge length, $l_o$	.....mm
Diameter after fracture, $d_f$	.....mm
Length after fracture, $l_f$	.....mm

Using provided load,  $F$  (N) – elongation,  $\Delta l$  (mm) data draw engineering stress-strain diagram and based on this diagram, also do the followings;

- Compute the modulus of elasticity.
- Find the yield stress of the material in MPa.
- Calculate the maximum load in kgs that the material may carry.
- Compute the modulus of resilience and toughness.
- Find the ductility in % elongation (EL) and % Reduction in area (RA).