

MAE 315: MATLAB Intro Project Fall 2021

A tensile test was performed on a Carbon Steel specimen. Displacement data and axial force were recorded during the test. Using the provided data, plot the stress vs. strain curve for the specimen along with all proper plot markings. Find the ultimate and rupture stresses and strains along with the value of Young's modulus. Utilizing the Young's modulus and the 0.2% offset method, calculate the yield point. Finally, calculate the zeroth-order uncertainty in the ultimate stress, ultimate strain, and Young's modulus. Results should be presented in a short, organized write-up. Presentation should be formal and professional.

Length (in)	Thickness (in)	Width (in)
6.250	0.050	0.425

Table 1: Measured specimen dimensions.

Calipers	Tape Measure
0.001 in	1/32 in

Table 2: Measurement resolution.

Grips Force	Grips Displacement
1% of measured value	1 % of measured value

Table 3: Measurement uncertainty.

Note: Length of specimen was measured using the tape measure. Thickness and width of specimen were measured using calipers.

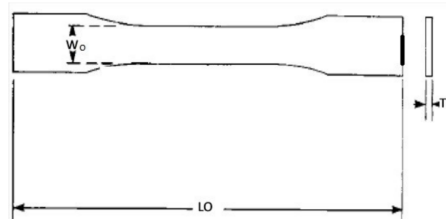


Figure 1: Dogbone Dimensions