

ME218 - Solid Mechanics Lab

Student Design Experiment Group : **S2G9** - Stage 2

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1. Method

- (a) Acquire our testing specimens of appropriate dimensions from the vendor
- (b) Set up the Universal Testing Machine for use in Heavy Machinery Lab, CE
- (c) Setting up LVDT to measure the lateral displacement accurately
- (d) Perform buckling, until noticeable snap-bending takes place in the specimen
- (e) Use videography with LVDT readings and set-up for continuous data range

2. Material and their Availability

- (a) **Material** : Mild Steel
- (b) **Dimension of Material** : 50cm x 10cm x 0.7cm
- (c) **Availability** : Will acquire 3 such from the chosen vendor

3. Instruments and Their Access

- (a) **Instrument** : Universal testing Machine and LVDT available in **Heavy Machinery Lab**, Civil Engineering Department where we can perform Buckling test.
- (b) **Access** : Our team has visited heavy Machinery Lab and talked with lab assistant and he has allowed us to perform the experiment.

4. Data Collection and Analysis

- (a) **Data Collection**
 - (a) Axial force data to be calculated from the UTM.
 - (b) Transverse displacement of mid-point to be measured using a LVDT.
- (c) **Analysis**
 - (a) Plotting of Calculated data on Matplot/similar plotting software
 - (b) Calculate Critical Buckling Point from graph