**Department of Mechanical Engineering**

**Mechanics Division**

**Spec. Laboratory - Buckling Test Report**

**Lab. Date: Number:**

**Name & Surname:**

**Lab. Instructor: Group/Sub-group:** ….. / ….

**Place of Lab:** B Block – Mechanics Lab.

**Course Topic:** Buckling Test

**Subject:** Buckling Investigation

**Devices and Materials:**

- Sample Bar

- Buckling Test Set

- Digital Display (for deflection)

**Required:**

1. What is buckling? Which conditions are required to mention about buckling effect?

2. Reorganize the Euler`s Buckling Formula (which is given for the case that both ends pinned support, in laboratory preparation documents) for these conditions below:

1. CASE: One of the ends is fixed support the other is free

2. CASE: One of the ends is fixed support the other is pinned support

3. CASE: Both ends fixed support

3. Compare the theoretical and experimental results. Comment about the effect of support types (fixed, pinned) to the buckling of the beam.

**Table 1**. Buckling Test Data

|  |  |  |  |
| --- | --- | --- | --- |
| Material of the beam:.................................... | | Dimensions of the cross-section..................... | |
| Support Type:................................................. | | Length of the beam........................................ | |
| Test No: | Force (N) | | Buckle (mm) |
| 1 |  | |  |
| 2 |  | |  |
| 3 |  | |  |
| 4 |  | |  |