

Structural engineering Laboratory

The structural engineering laboratory covers the essential foundations of the civil engineering field. At the laboratory, selected concepts, taught at “Engineering mechanics”, “Strength of materials” and “Structural static analysis” classes, are examined experimentally. A considerable attention is given to the physical problem’s idealization, its applicability and to the theories’ intrinsic assumptions. The students are also introduced to common experimental setups, data measurement and analysis, and an interpretation of results.

The main subjects addressed in this laboratory are:

- Center of gravity
- Influence lines, reciprocal theorem, the force method, for determinate and indeterminate structures
- Elastic buckling of columns and frames
- Bending of beams
- Torsion of beams
- Beams subjected to combined bending - shear, and bending - torsion
- Stress’s concentrations and San Venant’s principle
- Eccentric loading
- Deformation of frames subjected to bending

Measurement devices/techniques: Load cells, strain gauges and strain rosettes, photo elasticity

