Scope	**Skew bending**			
Group		Team No.		Date	
Team members				
Comments				

1. Principle

The exercise consists of loading a cantilever bar with a force whose direction does not coincide with the direction of any of the principal axes of inertia, and measuring the beam's deflection. The measurement results (deflections) should be compared with theoretical values.

2. Test stand

The aluminum cantilever bar is loaded with a concentrated force F (Fig. 1).
The cross-sectional dimensions of the rod are 10×25 mm, and the longitudinal modulus of elasticity of aluminum $E = 70$ GPa.

Rotate the rod to any angle α; $\alpha =$ ………….. Figure 1 shows possible bar arrangements.
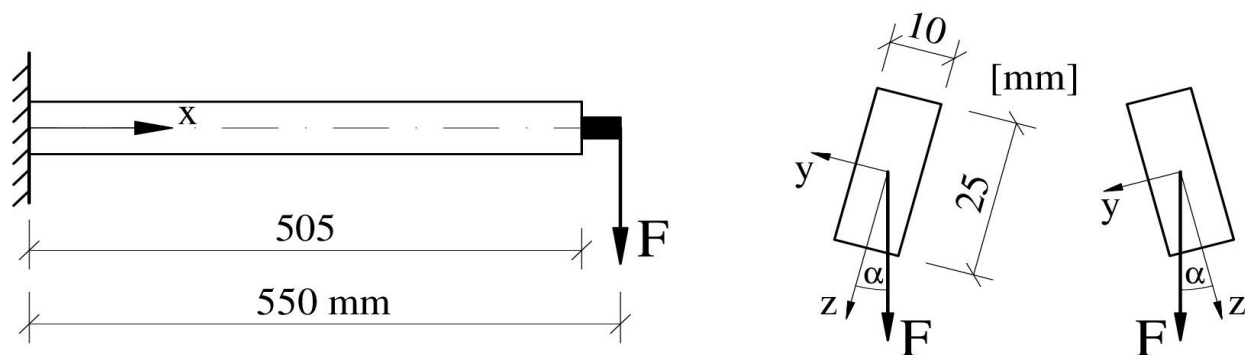

Fig. 1 Skew bending

3. Measurement of beam deflections

In order to determine the beam displacement components at the point with coordinate $x = 505$ mm, an initial reading of the displacement gauges should be taken, then a specific load F should be applied and the gauge readings should be taken again. The difference in the readings for each of the gauges is the specific component of the beam displacement (horizontal and vertical component).

Force F [N]	Reading of the displacement gauge – vertical component [mm]	Reading of the displacement gauge – horizontal component [mm]
0.0		