

Title <b>Strength of Materials I</b>	Code <b>10102512310102102249</b>
Field <b>Mechanical Engineering</b>	Year / Semester <b>2 / 3</b>
Specialty -	Course <b>core</b>
Hours Lectures: <b>2</b> Classes: <b>1</b> Laboratory: -    Projects / seminars: -	Number of credits <b>4</b>
	Language <b>polish</b>

**Lecturer:**

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**Status of the course in the study program:**

- Basic course of the study program.

**Assumptions and objectives of the course:**

- Getting acquainted with basing knowledge of theoretical and experimental methods connected with fundamentals of strength analysis of structures, stability, experimental material testing, and vibrations of mechanical systems.

**Contents of the course (course description):**

- External and internal loadings, stress and strain. Basic tests of the mechanical properties of materials. Strength condition and generalized Hooke's law. Tension and compression within elastic limits, Statically determinate and indeterminate bar systems. Material failure theories. First and second moments of area, Parallel axis theorem. Torsion of bars of circular and noncircular cross sections. Bending moment and shear force in beams. Bending of beams.

**Introductory courses and the required pre-knowledge:**

- The knowledge of fundamentals in mathematics, applied mechanics and statics.

**Courses form and teaching methods:**

- Lectures supported by exercises.

**Form and terms of complete the course - requirements and assessment methods:**

- Written evaluation of knowledge.

**Basic Bibliography:**

**Additional Bibliography:**