Title	Code
Theory Elasticity and Plasticity	**10102552310102101577**
Field: **Mechanical Engineering**	Year / Semester: **2 / 3**
Specialty: **-**	Course: **core**
Hours: Lectures: **1** Classes: **8** Laboratory: **-** Projects / seminars: **-**	Number of credits: **2**
	Language: **polish**

Lecturer:

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Status of the course in the study program:

- Core course at the Mechanical Engineering Faculty to second degree studies.

Assumptions and objectives of the course:

- The student should obtain knowledge of theoretical fundamentals and practice for solution of basic elasticity and plasticity problems.

Contents of the course (course description):

- Stress tensor. Principal stresses and principal directions. Maximum shear stresses. Strain tensor of low deformations. Hook?s law. Equations of displacement and equations of stresses in theory of elasticity. Plane state of stresses and strains. Airy stress function. Solutions by means od polynomials and Fourier series. Torsion of prismatic rods. Bending of prismatic bars. Basic models of elastic-plastic materials. Criteria for yielding. Basic theory of plasticity: Levy?ego-Misesa, Hencky?ego-Iliuszyna, Prabdtla-Reussa. Torsion of prismatic rods in elastic-plastic region.

Introductory courses and the required pre-knowledge:

- Knowledge of applied mechanics. Basic knowledge of differential calculus and vector algebra.

Courses form and teaching methods:

- Lectures and practices lectures.

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

- Written test from lectures and practical lectures

Basic Bibliography:

Additional Bibliography: