

Title <b>Engineering Applications of Strength of Materials II</b>	Code <b>1010101151010110458</b>
Field <b>Civil Engineering First-cycle Studies</b>	Year / Semester <b>3 / 5</b>
Specialty <b>Structural Engineering</b>	Course <b>core</b>
Hours Lectures: <b>1</b> Classes: -    Laboratory: -    Projects / seminars: <b>1</b>	Number of credits <b>2</b>
	Language <b>polish</b>

**Lecturer:**

Prof. dr hab. eng. Andrzej Garstecki, dr eng. Zbigniew Pozorski  
Institute of Structural Engineering,  
60-965, Poznań Piotrowo 5, +48 61 665 2454  
andrzej.garstecki@put.poznan.pl, zbigniew.pozorski@put.poznan.pl

**Faculty:**

Faculty of Civil and Environmental Engineering  
ul. Piotrowo 5  
60-965 Poznań  
tel. (061) 665-2413, fax. (061) 665-2444  
e-mail: office\_dceef@put.poznan.pl

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

Obligatory course for students of Building and Engineering Structures and Construction Engineering and Management

**Assumptions and objectives of the course:**

Learning the phenomena of the mechanics of composite materials and composite structural elements. Learning methods of the static analysis and methods of engineering design and experimental testing of these elements.

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

State of stress and strain in composite materials, composite structural elements and in sandwich beams and plates with soft cores. Action of loads and thermal distortions. Analysis of the influence of load and support conditions on static response of structural elements. Failure mechanisms.

Engineering methods of analysis of thin walled steel structures. Basis of Vlasov theory. Generalized beam theory. Local effects: local buckling, plasticity, contour deformation, stress concentration. Method of effective cross-section.

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

knowledge of strength of materials according to program of previous courses

**Courses form and teaching methods:**

tutorials

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

written tests

**Basic Bibliography:**

**Additional Bibliography:**