

**IPPT PAN DOCTORAL STUDY
TEACHING PROGRAMME**

WARSAW 2013/2014

Introduction to Measurement Techniques in Structural Mechanics

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The course is devoted to fundamentals of experimental measuring techniques and data processing in structural mechanics. The course contains two educational blocks: lectures and practice course. The lectures are dedicated to elementary aspects of measuring issues suitable for structural mechanics testing. The practice course contains conducting experiments using the hydraulic machine for material testing system and experiments by means of the drop-test tower.

Main topics :

1. Techniques and equipment in experimental structural mechanics.
2. Characterization of transducers utilized in experimental structural mechanics.
3. Fundamentals of digital signal processing.

Practice course:

1. Strain measurements with resistance strain gauges and piezoelectric strain gauges. Experiments using the hydraulic material testing machine.
2. Measurements of transient mechanical quantities in dynamic test. Experiment using the drop test tower. Measurements with indirect methods.

The total number of lecture hours: 8, laboratory exercises: 8 hours, self-teaching: 15, direct tutoring and consultations: 20 hours.

ECTS Points: 2