Title	Code
Basics in Machine Construction (Podstawy konstrukcji maszyn)	**1010401141010210654**
Field: **EDUCATION IN TECHNOLOGY AND INFORMATICS**	Year / Semester: **2 / 4**
Specialty: **-**	Course: **core**
Hours: Lectures: **2** Classes: **1** Laboratory: **-** Projects / seminars: **1**	Number of credits: **5**
	Language: **polish**

Lecturer:

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Status of the course in the study program:

Core course of the study for Education in Technology and Informatics, Faculty of Technical Physics.

Assumptions and objectives of the course:

Study in the range: selected problems of strength of materials, mathematical modeling of machine elements and joints, mechanical engineering.

Contents of the course (course description):

Introduction: the definitions, the phases of design, constraints of design, optimal design, dimensions and tolerances. The design of screws, fasteners and connections. Welded, brazed and bonded joints. Mechanical springs. Vibration damping. Rolling contact bearing. Lubrication and journal bearings. Gearing: types of gears, involute properties, the forming of gear teeth, bevel gears, worm gears, force analysis of spur gears, Flexible mechanical elements: belts, roller chains, wire rope. Shafts and axles. Clutches and brakes. Pressure vessels.

Introductory courses and the required pre-knowledge:

Classical mechanics and strength of materials

Courses form and teaching methods:

Lectures, classes and design of selected simple machine

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

Examination and a simply machine design

Basic Bibliography:

1. Dietrich M. (Ed.) Podstawy konstrukcji maszyn, Warszawa, WNT, 1999.
2. Magnucki K. Podstawy konstrukcji maszyn. Wyd. Politechniki Poznańskiej, 2006.
3. Mazanek E. (Ed.) Przykłady obliczeń z podstaw konstrukcji maszyn. Warszawa Wydawnictwo Naukowo-Techniczne, 2005.
4. Shigley J.E., Mischke C.R., Budynas R.G. Mechanical engineering design. McGraw-Hill Book Company, Boston, London, New Delhi, Seoul, Sydney, Taipei, Toronto, 2004.

Additional Bibliography:

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