Title	Code
(Materiałoznawstwo)	**1010401121010230614**
Field: **Edukacja Techniczno-Informatyczna**	Year / Semester: **1 / 2**
Specialty: **-**	Course: **core**
Hours: Lectures: **2** Classes: **-** Laboratory: **1** Projects / seminars: **-**	Number of credits: **4**
	Language: **polish**

Lecturer:

dr inż. Maciej Tuliński
Institute of Materials Science and Engineering
tel. 61 665 3628
e-mail: maciej.tulinski@put.poznan.pl

Faculty:

Faculty of Technical Physics
ul. Nieszawska 13A
60-965 Poznań
tel. (061) 665-3160, fax. (061) 665-3201
e-mail: office_dtpf@put.poznan.pl

Status of the course in the study program:

-Obligatory course.

Assumptions and objectives of the course (in the form of learning outcomes):

-The students will gain theoretical knowledge of material?s science.

Contents of the course (course description):

-During course the following topics will be addressed: Matter and its components. The selection of engineering materials. Fundamentals of material's design. Sources of information about engineering materials, their properties and applications. Strengthening of metals and alloys and the formation of their structure and properties by technological methods (crystallization, plastic deformation, recrystallization, thermo-plastic, phase transformations during heat treatment, diffusion, the role of surface layers). Working conditions and wear mechanisms (mechanical properties, resistance to cracking, fatigue, creep, corrosion, tribological wear). Steels, alloys, nonferrous metals and alloys. Sintered materials and ceramics, glass and glass ceramics. Polymer and composite materials. Modern functional and special materials. Methods of testing materials.

Introductory courses and the required pre-knowledge:

-Physics: atomic structure, radiation, diffraction, interference.
Crystallography: crystal symmetry, Miller indices.

Courses form and teaching methods:

-Lectures, laboratory.

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

-Assessment of laboratory works and written examination.

Basic Bibliography:

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Additional Bibliography:

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