

Course Syllabus

Academic year: 2018-2019

Institution	University of Petroșani
Faculty	Mechanical and Electrical Engineering
Field of study	Industrial engineering
Level	Bachelor
Program of study	Machine Building Technology

Course	Materials science and engineering
Code	2BB1OD02
Year of study (semester)	I (I)
Number of hours	56
Number of credits	5
Professor	Professor eng.,Ph.D. BOLUNDUȚ Ioan

No.	Topic
1.	Properties of metallic materials (physical, chemical, mechanical and technological)
2.	Crystalline structure of metals. Getting crystallography. Imperfections of crystalline networks. Cooling curves. Alloy Theory (generalities, equilibrium charts)
3.	Iron-carbon alloys. Iron-carbon diagram. Fonte. Steels.
4.	Nonferrous metals and alloys.
5.	Thermal treatments. Annealing. Tempering. Return. Thermochemical treatments. Thermomechanical treatments. Heat treatment equipment.
6.	Properties of plastics.
7.	Types of plastics. Structure and constituents of plastics. Classification of plastics. Processing of plastics.
8.	Structure and properties of ceramic materials.



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9.	Types of ceramic materials. Utility ceramics. Art ceramics. Industrial ceramics. Processing of ceramic materials.
10.	Composite materials. Types of composite materials (armed with particles, fibers and structures). Processing of composite materials

