

POLITEHNICA University of Bucharest (**UPB**)
 Faculty of Engineering and Management of Technological Systems (**IMST**)
 Study Programme: Industrial Engineering (**IE**)
 Form of study: Licence (Bachelor)

COURSE SPECIFICATION

Course title:	Materials Technology	Semester:	4
Course code:	UPB.06.S.04.O.002	Credits (ECTS):	5

Course structure	Lecture	Seminar	Laboratory	Project	Total hours
<i>Number of hours per week</i>	2	-	2	-	4
<i>Number of hours per semester</i>	28	-	28	-	56

Lecturer	Lecture	Seminar / Laboratory / Project
<i>Name, academic degree</i>	Rîndașu Ovidiu Viorel, Assoc. Prof.	Dumitraș Marius, lecturer
<i>Contact (email, location)</i>	viorel.rindasu@gmail.com; CE206	dumitras@gmail.com; CE 303

Course description:

The course offers the general training in primary manufacturing processes, giving competencies in modern technologies practice.
 Summary of manufacturing processes for obtaining metals, ceramics, plastics, composites.
 Product design. Processes selection and design. Specific flaws.

Seminar / Laboratory / Project description:

The lab presents some principal manufacturing properties of engineering materials, as well as the main manufacturing processes based on it.
 Hardness testing. Impact strength testing. Penetrant testing. Magnetic particles testing. Ultrasound testing. X – ray testing. Plasticity. Deformability. The laws of plastic deformation. Extrusion. Metal sheet manufacturing. Casting. Arc welding. Gas welding. Resistance welding. Composite manufacturing.

Intended learning outcomes:

The course graduates gain the following competencies:

- To operate with industrial engineering concepts
- To exploit manufacturing systems
- To solve technological problems

To optimize the product manufacturing cycle.

Assessment method:	% of the final grade	Minimal requirements for award of credits
Written exam	40 (20 - partial exam + 20 - final exam)	50 %
Report / project	-	-

Homework	-	-
Laboratory	50	50 %
Other	10	50 %

References:	
1. Bralla, J.G., "Handbook of Product Design for Manufacturing. A Practical Guide to Low-Cost. Production", McGraw Hill, Inc. NY, 1986 2. Walker, J.M., "Handbook of Manufacturing Engineering", Marcel Dekker, Inc., NY, 1996 Internet: Wikipedia.en.	
Prerequisites:	Co-requisites (courses to be taken in parallel as a condition for enrolment):
attending and / or passing the following subjects: Materials Science, Mathematics, Chemistry, General Physics, Mechanics of materials, Technical drawing, English.	Economics
Additional relevant information:	

Date: 11th of July 2016

Professional degree, Surname, Name:
 Assoc. Prof. PhD. Eng. Ovidiu Viorel Rîndașu