

POLITEHNICA University of Bucharest (**U.P.B**)
 Faculty of Engineering and Management of Technological Systems (**I.M.S.T.**)
 Study Program: Industrial Engineering (**I.E.**)
 Form of study: Bachelor

COURSE SPECIFICATION

Course title:	Mechanical vibrations	Semester:	4
Course code:	UPB.06.D.04.A.006	Credits (ECTS):	4

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>	Ioan PĂRĂUȘANU, Prof.Dr.	Ioan PĂRĂUȘANU, Prof.Dr.
<i>Contact (email, location)</i>	parausanu.ioan@yahoo.com	parausanu.ioan@yahoo.com

Course description:
A comprehensive understanding of structural dynamics is essential to the design and development of new structures, and to solving noise and vibration problems on existing structures. The mechanical vibration, which is an efficient tool for describing, understanding and modeling structural behavior, is presented. The study of mechanical vibration is an excellent means of attaining a solid understanding of structural dynamics of the structures.
Seminar / Laboratory / Project description:
In the frame of laboratory the students will assimilate the methods used in structural testing, methods which consist of a comprehensive introduction to the theoretical background to mechanical vibrations and structural dynamics. If the methods are truly understood, we consider that the student, armed with a simple set of measurements and intelligent interpretation, will be able to solve many of noise and vibration problems met with in industry.
Intended learning outcomes:
The study of mechanical vibrations is essential for understanding and evaluating the performance of any engineering product. Whether we are concerned with printed-circuit boards or suspension bridges, high-speed printer mechanisms or satellite launchers, dynamic response is fundamental to sustain a satisfactory operation.

Assessment method:	% of the final grade	Minimal requirements for award of credits
Written exam	40	20
Report / project		
Homework		
Laboratory	20	20
Other (Partial exam)	40	20

References:	
[1]	I.PĂRĂUȘANU, <u>Dinamica mașinilor cu rotor</u> , Editura Cavallioti, București 1996, ISBN 973-97714-8-3.
[2]	C.ISPAS, H.GHEORGHIU, I.PĂRĂUȘANU, V.ANGHEL, <u>Vibrations des systèmes technologiques</u> , Editura AGIR, București, 1999, ISBN 973-99296-1-3.
[3]	I.PĂRĂUȘANU, <u>Dynamique des structures depuis le simple au complexe</u> , Editura Printech, București, 2003, ISBN 973-652-966-5.
[4]	I.PĂRĂUȘANU, <u>Vibrodiagnoza mașinilor cu rotor</u> , Editura Printech, București, 2004, ISBN 973-652-969-X.
[5]	I.PĂRĂUȘANU, V.ANGHEL, <u>Vibrații mecanice. Teorie și aplicații</u> , Editura Printech, București, 2007, ISBN 978-718-709-3.
[6]	C.ISPAS, F.BAUȘIC, I.PĂRĂUȘANU, M.ZAPCIU, C.MOHORA, <u>Dinamica mașinilor și utilajelor</u> , Editura AGIR, 2007, ISBN 978-973-720-147-8.
[7]	I.PĂRĂUȘANU, <u>Recueil de problèmes de vibrations mécaniques avec solutions complètes, indications et réponses</u> , Editura Printech, București, 2003, ISBN 973-652-967-3.
[8]	I.PĂRĂUȘANU, V.ANGHEL, <u>Vibrations mécaniques. Compléments de cours avec applications</u> , Universitatea “Politehnica” din București, 1997.
[9]	V.ANGHEL, I.PĂRĂUȘANU, C.Mareș, <u>Mechanical Vibrations – Applications</u> , Departamentul de științe inginerești, Universitatea “Politehnica” din București, 2000.
Prerequisites:	Co-requisites <i>(courses to be taken in parallel as a condition for enrolment):</i>
Mechanics, Strength of materials	Mathematics (Algebra)
Additional relevant information:	

Date: 07.07.2016

Professional degree, Surname, Name: Prof. Dr. Ioan PĂRĂUȘANU