

POLITEHNICA University of Bucharest (**UPB**)  
 Faculty of Industrial Engineering and Robotics (**IIR**)  
 Study Programme: Industrial Engineering (**IE**)  
 Form of study: Licence (Bachelor)

## COURSE SPECIFICATION

<b>Course title:</b>	<b>Machine Elements</b>	<b>Semester:</b>	4
<b>Course code:</b>	UPB.06.D.04.O.005	<b>Credits (ECTS):</b>	6

<b>Course structure</b>	Lecture	Seminar	Laboratory	Project	Total hours
<i>Number of hours per week</i>	2	-	2	2	6
<i>Number of hours per semester</i>	28	-	28	28	84

<b>Lecturer</b>	Lecture	Seminar / Laboratory / Project
<i>Name, academic degree</i>	Radulescu Alexandru Valentin	Laboratory: Paduraru Georgiana Project: Radulescu Irina
<i>Contact (email, location)</i>	University POLITEHNICA Bucharest, Dept. Machine elements and Tribology Email: <a href="mailto:varrav2000@yahoo.com">varrav2000@yahoo.com</a>	University POLITEHNICA Bucharest, Dept. Machine elements and Tribology Email: Laboratory: <a href="mailto:gi.dumitru@gmail.com">gi.dumitru@gmail.com</a> Project: <a href="mailto:irena_sandu@yahoo.com">irena_sandu@yahoo.com</a>

<b>Course description:</b>
The course aims to initiate in design, product development and training skills and expertise of mechanical components for operation of machinery. It highlights the design concept technically and economically optimized, leading to the development of efficient and competitive products, in compliance with ergonomic design and environmentally friendly.
<b>Seminar / Laboratory / Project description:</b>
Applications aimed at substantiating knowledge of major construction machine elements, forming habits of choice of materials and the use of specific standards and correct understanding of the basic loads of machine elements.
<b>Intended learning outcomes:</b>

- Knowing and understanding the terms "machine elements" and understanding of the kinematic linkages governing the functioning of any equipment;
- Linking correct and optimal knowledge acquired in Drawing, Mechanics and Strength of Materials;
- Evaluating the strengths acting on the machine elements in static and dynamic conditions; □  
Acquiring the necessary knowledge of industrial product design.

<b>Assessment method:</b>	<b>% of the final grade</b>	<b>Minimal requirements for award of credits</b>
Written exam	40%	To be able to complete in terms of construction and functional machine elements studied in order to obtain maximum performance
Project	30%	Attending all the project meetings and solving the problems asked
Homework	-	-
Laboratory	15%	Correct processing of the experimental results, discussion and interpretation of the experimental measurements
Other: Verification of theoretical knowledge of the material taught	15%	Correct solving of a half of the problem

#### **References:**

1. Gafițeanu Mihai, et al., *Organe de mașini*, Vol. I și II, Editura Tehnică, București, 1981, 1983
2. Rădulescu, Al.V. *Organe de mașini*, Vol. I, Editura PRINTECH, 2014
3. Rădulescu, Al.V. *Machine Elements – Problems and solutions*, Editura PRINTECH, 2014
4. Turcu, S., Rădulescu, Al.V. , *Organe de mașini – Teste de curs I*, Editura PRINTECH, 2000
5. Laurian T., Seiciu P. L., *Caiet de laborator. Organe de mașini și tribologie*, Ed. POLITEHNICA Press, 2011
6. Hamrock, B., et al., *Fundamental of machine elements*, Mc Graw Hill, 1999
7. Robert L. N., *Machine Design: An Integrated Approach*, Prentice Hall, 2010

<b><i>Prerequisites:</i></b>	<b><i>Co-requisites</i></b> <i>(courses to be taken in parallel as a condition for enrolment):</i>
<ul style="list-style-type: none"><li>• Mechanics;</li><li>• Strength of materials;</li><li>• Engineering graphics</li></ul>	<ul style="list-style-type: none"><li>• Material Science;</li><li>• Computer aided design;</li><li>• Tolerances</li></ul>
<b><i>Additional relevant information:</i></b>	

Date: 07.07.2016

Lecturer: Prof. dr. ing. Alexandru Valentin Rădulescu