

Study program / course: Mechanical Engineering			
Type and level of study: Master academic studies			
Course: Material handling and conveying devices and machinery			
Lecturers: Radovan B. Slavkovic, Ph.D., full professor, Svetislav R. Jovicic, Ph.D., full professor			
Status of course: Obligatory for module M₂, II semester			
Number of ECTS: 6			
Precondition: none			
The objective of course Introducing students with ways of functioning of material handling devices and machinery. Qualification of students for independent solving of problems from industry praxis.			
The outcome of course After passing the exam, the students are expected: <ul style="list-style-type: none"> to know and understand operating principles of material handling devices and machinery and its mechanisms to independently research and design constituent elements of hoisting mechanisms to estimate the condition of a real construction of a crane according to standards 			
Syllabus - Introduction. Course contents. - Subdivision of material handling devices and basic characteristic of devices and machinery from each group. - Machinery with periodic operation. - Universal and special devices for load gripping. - Calculation and selection of ropes, pulleys, drums, brakes. - Material handling mechanisms. - Dynamic calculation of engine power, overload rate, acceleration period, braking period. - Motion mechanisms. General dynamic calculation of motion mechanisms for cranes. - Design and calculation of characteristic types of discontinuous material handling machinery. - Continuous material handling machinery. Area of application and capacity calculation. - Design and calculation of characteristic types of continuous material handling machinery. - Concept and planning the warehouse. Types and basic characteristics of different type of warehouses. - In the framework of studies research work, the students will be qualified for basic research in course area.			
Recommended reading 1. Ostrić D.: "Cranes", (in Serbian), FME Belgrade, 1992 2. Tošić S.: "Material handling devices – continuous transport", (in Serbian), FME Belgrade, 1990 3. Mijajlović R., Marinković Z., Jovanović M.: "Material handling machinery – practical course", (in Serbian), Niš, 1988 4. Šaljić D.: "Material handling devices – instructions for projects and collection of solved problems", (in Serbian), FME Kragujevac, 1978 5. Dedijer S.: "Fundamentals of material handling devices", (in Serbian), "Građevinska knjiga", Belgrade, 1970			
The number of hours of active teaching:			Other classes:
Theory: 2	Practical classes: 1.6	Other forms of teaching: 0.4	Research study: 0
Methods of teaching Teaching consists of lectures, exercises and independent work of students. Within the lectures, theoretical basics and information on material handling devices and machinery are given. Within the exercises, calculation problems are solved from specific areas and on independent project task is done.			
Evaluation of knowledge			
Pre-final exam obligations	points	Final exam	points
Activities during the classes:	5	written (verbal) exam	30
Practical classes:			
Colloquiums(s) :	40 (2 x 20)		
Seminar(s) :	25		