

Study program: Industrial engineering – Mechanical engineering			
Course title: Basics of Constructing			
Professor: Đukić Rade			
Type of course: Compulsory			
ECTS credits: 6			
Prerequisites: none			
Aims of the course: Students acquire knowledge, skills and competence that enable them to select solutions, and perform product analysis. Students develop creative and innovative abilities in terms of designing specific constructions and parts through different phases of development (design and testing during development, production processes and product exploitation).			
Learning outcomes: The student applies design principles, methods for analyzing product construction and components, and selects and uses construction methods in practical work.			
Syllabus: <i>Theoretical part:</i> <ol style="list-style-type: none"> 1. Construction and production, deformable materials, Hook's law; 2. Geometric characteristics of cross-section, normal and tangential tensions; 3. Load and load capacity, dynamic firmness, Wohler curve, testing of structures, components and final products; 4. Application of pneumatic and hydraulic elements in design; 5. Tolerances and pressed couplings, load capacity; 6. Molded structures, welded structures, lightweight structures, carriers; 7. Application of software packages in design and load simulation. <i>Practical part:</i> Auditory and laboratory exercises			
Literature: <ol style="list-style-type: none"> 1. Z. Petkovic. D. Ostrić, Metalne konstrukcije u mašingradnji 1, MFBeograd, 1996. 2. V. Nikolic Č Mašinski elementi, Mašinski fakultet u Kragujevcu, 2004. 3. Jovičić S., Marjanović N.,: Osnovi konstruisanja, SAD Laboratorija, FIM Univerziteta u Kragujevcu, Kragujevac, 2011. 4. Ašković P. Osnovi hidraulike i pneumatike, Mašinski fakultet Beograd, 1982. 			
Total number of active classes: 60		Lectures: 30	Practical classes: 30
Teaching methods: lectures; auditory and lab exercises			
Grading system (maximum 100 points) grading scale from 5 to 10: below 51 points – student fails the exam, grade 6 from 51- 60 points, grade 7 from 61-70 points, grade 8 from 71-80 points, grade 9 from 81-90 points, grade 10 from 91- 100 points.			
Pre-exam obligations:	Points:	Final exam:	Points:
Activity during lectures	max 5	Oral exam	50
Practical training	max 5		
Written tests	max 20		
Term papers	max 20		
Minimum requirement for the final exam	30		