

<b>Study program:</b> Industrial engineering – Mechanical engineering			
<b>Course title:</b> Automation of Production			
<b>Professor/assistant:</b> Đorđević Milan, Grubiša Miodrag			
<b>Type of course:</b> Compulsory			
<b>ECTS credits:</b> 6			
<b>Prerequisites:</b> none			
<b>Aims of the course:</b> Students gain knowledge and skills in the field of automatic management and acquire competence in practical application of mechanics, pneumatics, hydraulics and electronics in the automation of production processes. Students develop the ability to critically approach effects of automation on society, economy, production etc.			
<b>Learning outcomes:</b> Students are trained to select components, to integrate them into appropriate system of automatic production and to optimize the workplace and process by eliminating losses through the application of automated systems.			
<b>Syllabus:</b> <i>Theoretical part:</i> Basic definitions and concepts of automatic control. The behavior of automatic control systems. Transfer function, block diagram algebra. Digital automatic control system and final automatic machines. Boolean algebra – basic rules, theorems and postulates. Logic functions and minimization methods. Combined and sequential automatic machines. Automatic machines with pneumatic and hydraulic elements. Electropneumatic and electrohydraulic automatic machines. The use of computers in automation. The use of programmable logic controllers. Automation by "small automation" of production machines. Automation of production processes: machine processing, transport, assembly, packaging. Subsequent automation. <i>Practical part:</i> Auditory exercises: solving practical tasks in the field of automation of production processes and solving problems on examples from practice, preparation of term papers;			
<b>Literature:</b> 1. Pilipović M., Automatizacija proizvodnih procesa, Univerzitet u Beogradu, Mašinski fakultet, 2006. 2. Bučevac Zoran, Praktikum za laboratorijske vežbe iz diskretnih digitalnih sistema automatskog upravljanja, Mrlješ, Beograd, 2000. 3. Mandić Vučeta, Osnovi automatizacije - vežbe i zbirka zadataka, Viša tehnička mašinska škola, Beograd, 1995. 4. Materijali sa predavanja i vežbi			
<b>Total number of active classes:</b> 75		<b>Lectures:</b> 45	<b>Practical classes:</b> 30
<b>Teaching methods:</b> Lectures – interactive approach; Practical classes – solving tasks, preparation of term papers, analysis of problems, consultations.			
<b>Grading system</b> (maximum 100 points) grading scale from 5 to 10: below 51 points grade 5, 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.			
<b>Pre-exam obligations:</b>	<b>Points:</b>	<b>Final exam:</b>	<b>Points:</b>
Activity during lectures	max 5	Oral exam	50
Practical training	max 5		
Written test(s)	max 20		
Term papers	max 20		
Minimum requirement for the final exam	30		