

	FORM FOR PROPOSING A TOPIC IN THE SECOND CYCLE OF STUDIES	Oznaka	SAO-FENS.4.24.0-ENG
		Datum usvajanja	05.03.2019
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Department	Electrical and Electronics Engineering
Master thesis title:	Theory and Design of CNC Electronics
Mentor/professor - contact:	Assoc. Prof. Dr. Dejan Jokić, e-mail: dejan.jokic@ibu.edu.ba

Thesis background:	<p>Mechatronics is the word that best describes and explains the complexity of CNC machines. The combination of numerical control with electronic, mechanical and data processing systems leads to a new method of better and more quantitative production methods. In the last few years, the development and representation of CNC machines in production have enabled the production of the almost unthinkable. The applicability of modern CNC systems for future production technologies was examined, and a systematic approach to the construction of a control platform and the creation of specialized CNC systems based on it was proposed. The use of the decomposition method gives a better possibility of applying certain software and hardware, which when used give CNC machines greater possibilities, better outcomes, and the creation of a solution matrix for the additional synthesis of specialized CNC systems. CNC systems are produced according to their software and hardware capabilities, ie. the synthesis is performed by arranging the modules for a particular processing and application process.</p>
Thesis objective:	<p>This thesis aims to consolidate previous research and projects published on the topic of CNC system units through the literature background. Based on the research, CNC motherboards, their capabilities, advantages, and disadvantages will be tested and presented for the most efficient CNC control unit, with a focus on CNC routers for wood processing.</p>

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Literature:	<ol style="list-style-type: none"> 1. S. Mohsen Safavi & S. Saeed Mirian & Reza Abedinzadeh & Mehdi Karimian Use of PLC module to control a rotary table to cut spiral bevel gear with three-axis CNC milling DOI 10.1007/s00170-009-2466-0 2. Sergej N.GrigorievGeorgi M.Martinov The Control Platform for Decomposition and Synthesis of Specialized CNC Systems DOI:10.1016/j.procir.2015.08.031 3. Suk-Hwan Suh, Seong-Kyoon Kang, Dae-Hyuk Chung, Ian Stroud -Theory and Design of CNC Systems DOI 10.1007/978-1-84800-336-1
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