

Study program: Industrial Engineering			
Course title: Joining Techniques (Assembly-Disassembly & Welding techniques)			
Professor/assistant: Ph.D. Miloš S. Ristić			
Type of course: elective			
ECTS credits: 5			
Pre-requisites:			
<p>Aims of the course: istointroduceastudentandhelphimacquiredifferentpartjoiningtechniques. Teachingprocessaimsto:</p> <ul style="list-style-type: none"> ▪ pointtotheplaceandroleofpartjoiningprocessfromtheperspectiveofanendproduct, ▪ explaintheconnectionofdifferentshapesandmaterialsfromtheperspectiveoffunctionality,reliabilityandergonomics, ▪ involveastudentinresearching,analyzingandsolvingspecificproblems, ▪ instructastudenttousebothprintedandelectronicliterature, <p>raisestudent'sawarenessaboutthis/herresponsibilityinindustry,aswellasaboutpreventionandsafetymeasuresatwork.</p>			
<p>Learning outcomes:</p> <p>Afterthesuccessfulcompletionofthecourse,astudent:</p> <ul style="list-style-type: none"> ▪ knowsthebasicsofjoiningprocessusingscrews(groupandindividualphase) ▪ knowsthebenefitsofjointswiththelastictorplasticdeformationandconditionsforjointcreation ▪ knowstheweldingbasicsandcandifferentiateweldingtechniquesaccordingtoatypeofpipejoint ▪ canindependentlyandsafelyperformsimpleweldinanindustrialfacilityandexplainthemaincharacteristicsofthejoint,material,additionalmaterialandresultingphysical-chemicalbond, ▪ knowstheuseofhardandsoftsolderingandtheircharacteristics, ▪ knowsthetestingprocedureoftheweldedstructurewithdifferentmethodsandknowshowtospotmistakeintheweldedjoint, <p>knowsandusessafetyequipmentandprotectiveinstructionsatwork.</p>			
<p>Syllabus</p> <p><i>Theoreticalpart-</i> Joiningpartsbasics.Mechanicalpartjointwiththechangeofmaterialcharacteristics.Mechanicalpartjointwithplasticdeformationofmaterials.Mechanicalpartjointwiththelastictodeformationofmaterials.Mechanicalpartjointwithspecificshape.Newjoiningtechniques.Partreparation.</p> <p><i>Practicalpart-</i>Anexampleofdeterminingjoiningpartstechniquesandprocedures.Demonstrationofspecificproceduresofjoiningparts.Jointoftwoelementsinindustrialfacility.</p>			
<p>Literature</p> <ol style="list-style-type: none"> 1. BognerM., <i>Welding</i>, ETA, Belgrade, 2007. (InSerbian) 2. Ognjanović, M., MiltenovićV., <i>Machineelements I – mechanicalparts, relationsandjoints</i>, FacultyofMechanicalEngineeringinBelgradeandNiš, 1995. (InSerbian) 3. BlagojevićA., <i>Weldingprocess</i>, Glas, BanjaLuka, 1990. (InSerbian) 4. Bennett A.E., Louis J. Siy, <i>Blueprint Reading for Welders</i>, 8th Edition; Delmar, Cengage Learning, 			
Number of active classes			Other forms of teaching:
Lectures: 2	Practical classes: 2	Research work:	
<p>Teaching methods</p> <p>Theoreticalpartisperformedinmechanicallaboratory.Ateacherteachesthebasicsandthroughquestionsinvolvesstudentsinthelearningprocessthusapplyingdialogueorgroupdiscussion.Smallgroupsofstudentsbeforethelectureprepareashortsurveywhichformsthebasisfor teachingandinitiatesinterestofagroup.The teacheruses presentationsand videosinorderto helpstudentsunderstandthetopicandtherelatedissues.Thepracticalclassesareheldmostlyinthemechanicallaboratoryandpartlyinindustrialfacilitieswhereeverystudentgetsinvolvedinworkingonspecifictasks</p>			
<p>Grading system (maximum 100 points), grading scale from 5 to 10: below 51 points grade 5, grade 6 from 51-60 points, grade7 from 61-70 points, grade8 from 71-80 points, grade 9 from 81-90 points, grade 10 from 91-100 points.</p>			
Pre-exam obligations	points	Final exam	points
activity during theoretical lectures	10	written exam	40
practical training		oral exam	
colloquium(s)/seminar papers	50		
Sum	60	Sum	40