Tempus Project University of Kragujevac
WBCVMnet
WBC Virtual Manufacturing Network
Fostering an Integration of the Knowledge Triangle

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European Commission
TEMPUS

Name	**CAD modeling using Solid Works**		
Code	CTC-BL-01		
ECTS	4		
Location	KTC Banja Luka, Univesity of Bana Luca Faculty of Mechanical Engineers, Stepe Stepanovica 71, 78000 Banja Luka, BiH		
Trainers	PhD Zivko Babic, Assistant Branislav Sredanovic		
Purpose	New market demands in terms of pricing and product quality call for the implementation of more efficient ways to design products and tools, which includes the implementation of new CAD technology, modeling and FE simulation. Modeling and analysis of structures using the software is tested way to increase the efficiency of design and improve the quality of the finished product. Participants of this training will have the opportunity to learn and train for using of innovative CAD technology in product development.		
Recommended entry level	At least IV level of professional qualification, mechanical engineering, or recommended VII level of professional qualification, mechanical engineering		
Specials requires	Computer skills and and knowing roules of tehnical drawings		
Duration	30 classes		
General objectives	Attendents who acquire this training will be able to: • explain the importance of modeling in the design of products • use modern CAD software and modules for modeling • model complex mechanical parts and assemblies • analyze the work function of modeled machine components • automatically generate and manage technical documentation • use a module to simulate the load and optimize the product		
Topics	**1.** Modules of modern programming systems for product modeling **2.** Basics of the software SolidWorks **3.** Basic commands of module PartDesign in SolidWorks **4.** Advanced commands of module PartDesign in SolidWorks **5.** Basic commands of module Assembly in SolidWorks **6.** Advanced commands of module Assembly in SolidWorks **7.** Basic commands of module Drawing in SolidWorks **8.** Advanced commands of module Drawing SolidWorks **9.** Application-oriented modules of software SolidWorks **10.** Load simulation and optimization of structures by applying FEM		
Specific learning outcomes in topics	**Topic 1:** Modules of modern programming systems for product modeling	**No. of classes**	**1**
	Attendents will be able to: • list the modern software systems for products modeling and their modules • explain and list the advantages and disadvantages of the same • list the its capabilities		
	Topic 2: Basics of the software SolidWorks	**No. of classes**	**1**
	Attendents will be able to: • know the basic terms used in the field of product modeling • applications of the basic principles of products modeling • accept optimal strategy for product modeling • know of basic user interfaces and module in SolidWorks		
	Topic 3: Basic commands of module PartDesign in SolidWorks	**No. of classes**	**2**
	Attendents will be able to: • form its own strategy for modeling simple parts • apply basic commands when modeling parts • organize simpler and faster solutions when modeling parts • modeling simpler form		

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Specific learning outcomes in topics	**Topic 4:** Advanced commands of module PartDesign in SolidWorks	**No. of classes**	**6**
	Attendents will be able to: • apply advanced modeling commands in parts modeling • recognize optimal strategy for modeling of complex parts • used application command to create of standard mechanical parts • modeling complex geometric form • recognized requirements of real parts and apply the advanced controls		
	Topic 5: Basic commands of module Assembly in SolidWorks	**No. of classes**	**2**
	Attendents will be able to: • accept the strategy of creating of assembly from its real function • modeling simple and complex mechanical assemblies • define relationships between components in assembly • establish relationships that enable of the movement components		
	Topic 6: Advanced commands of module Assembly in SolidWorks	**No. of classes**	**4**
	Attendents will be able to: • use advanced controls to create the assemblies • use of standard parts data base to create assemblies • use tools to manage assembly tolerances • analyse the assembies by using explosive views • analyzing of the mass center of gravity, moments of inertia, surface and measure		
	Topic 7: Basic commands of module Drawing in SolidWorks	**No. of classes**	**2**
	Attendents will be able to: • use basic commands when generating technical drawings • edit the standard formats and rewrite header • generate orthogonal views of the drawing and axonometric views of parts • set dimensions of views		
	Topic 8: Advanced commands of module Drawing SolidWorks	**No. of classes**	**4**
	Attendents will be able to: • use advanced features when generating technical drawings • generate partial and complete cross-section drawings • generate detailed views and bring additional elements of the drawings • generate the accompanying table and BOM		
	Topic 9: Application-oriented modules of software SolidWorks	**No. of classes**	**6**
	Attendents will be able to: • use modules for the modeling of sheet metal parts • use modules for the modeling of welded structures • use modules for document management		
	Topic 10: Load simulation and optimization of structures by applying FEM	**No. of classes**	**4**
	Attendents will be able to: • simulate the load of parts and assemblies with loads different nature • optimize the construction		
Portfolio assessment	The treiners evaluates the level of success in overcoming the training of each student, through assessment exercises and testing.		