

Study Programme: Production engineering			
Course Unit Title: Internet Technologies in Production Engineering			
Course Unit Code: P1506			
Name of Lecturer(s): Milošević Mijodrag			
Type and Level of Studies: master			
Course Status (compulsory/elective): elective			
Semester (winter/ summer): summer			
Language of instruction: english			
Mode of course unit delivery (face-to-face/distance learning): face-to-face			
Number of ECTS Allocated: 5			
Prerequisites: none			
Course Aims: Introduction to modern approaches in manufacturing engineering by application of Internet technologies. Knowledge in the field of e-Bussines, as well as the basic principles of the e-Manufacturing and collaborative engineering methodology based on internet technologies. Introduction to Cloud-based approach and Internet of Things (IoT) in manufacturing and industry (IIoT).			
Learning Outcomes: Acquired knowledge enables utilization of internet technologies, as well as many technics and methodologies in development and control of technological and production structures in virtual collaborative environment.			
Syllabus. Information systems in production engineering. Introduction to Internet technologies. Electronic business (e-Business). Electronic signature (e-Signature). Standards for data exchange in Internet-based manufacturing process. Collaborative design in the Internet environment. Corporate portals. Web-based collaborative design systems. Concept of e-Manufacturing. Concept of Industry 4.0. Cyber-physical systems (CPS) in manufacturing. Cloud Manufacturing. Internet of Things (IoT) in manufacturing. Industrial internet of things (IIoT).			
Required Reading: Li, W.D., Ong, S.K., Nee, A.Y.C. Integrated and Collaborative Product Development Environment: Technologies and Implementations World Scientific, Singapore 2006 Cheng, K. E-Manufacturing, Fundamentals and Applications WIT Press/ Computational Mechanics 2005 Li, W., Mehnen, J. (EDs) Cloud Manufacturing Springer, London 2013 Jeschke, S., Brecher, C., Song, H., Rawat, D.B. Industrial Internet of Things Springer, London 2017 Gilchrist, A. Industry 4.0: The Industrial Internet of Things Apress, New York 2016 Zhang, Y., Tao, F. Optimization of manufacturing Systems Using the Internet of Things Academic Press 2016 Li, S. Securing the Internet of Things Rockland Syngress 2017			
Weekly Contact Hours: 3	Lectures: 3	Practical work: 0	
Teaching Methods: Lectures are realized in the form of lectures, computer practical classes and consultations.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Attendance			
Computer exercises			
Tests (4x)			

