

<b>Study program:</b> Mechanical engineering			
<b>Type and level of studies:</b> Master studies			
<b>Course unit:</b> Product and Process Quality Improvement			
<b>Teacher in charge:</b> dr Vladan Grković			
<b>Language of instruction:</b> English			
<b>ECTS:</b> 6			
<b>Prerequisites:</b> Statistics and probability			
<b>Semester:</b> Summer			
<b>Course unit objective:</b> Introduction to basic concepts of statistical quality control as methodology for solving practical problems.			
<b>Learning outcomes of the course unit</b> Mastering the techniques of applying statistical process control through practical examples of the application of statistical tools for analyzing and improving product quality and ensuring stability and process capability.			
<b>Course unit contents</b> <i>Theoretical classes</i> <ul style="list-style-type: none"> <li>• Quality, process and control. TQM, SPC process and system. Understanding the processes and statistical process control.</li> <li>• Tolerances. The loss function</li> <li>• The collection and presentation of data</li> <li>• The variability of the process</li> <li>• Process capability</li> <li>• Measurement errors. The optimal level of the process. Setting up the process.</li> <li>• Process control</li> <li>• Process control with numerical quality characteristics</li> <li>• Attribute control charts</li> <li>• Designing quality control charts</li> <li>• Process Improvement</li> </ul> <i>Practical classes</i> Exercise, Other modes of teaching, Study research work			
<b>Literature</b> D.C.Montgomery, G.C.Runger, <i>Applied Statistics and Probability for Engineers</i> , 6th Edition, Wiley, 2014. Oakland J.S., <i>Statistical Proces Control</i> , Butterworth Heinemann, 2008, Stapenhurst T., <i>Mastering Statistical Proces Control</i> , Butterworth Heinemann, 2005, Wetherill G.B., Brown D.W., <i>Statistical Proces Control, Theory and practice</i> , Springer, 1991.			
<b>Number of active teaching hours</b>			<b>Other classes</b>
Lectures: 3	Practice: 1	Other forms of classes: Independent work: 1	
<b>Teaching methods</b> Lectures, Numerical computational exercises. Study research work			
<b>Examination methods ( maximum 100 points)</b>			
<b>Exam prerequisites</b>	<b>No. of points:</b>	<b>Final exam</b>	<b>No. of points:</b>
Student's activity during lectures	10	oral examination	
practical classes/tests		written examination	50
Seminars/homework		.....	
Project	40		
Other			
<b>Grading system</b>			
<b>Grade</b>	<b>No. of points</b>	<b>Description</b>	
<b>10</b>	<b>91-100</b>	Excellent	
<b>9</b>	<b>81-90</b>	Exceptionally good	
<b>8</b>	<b>71-80</b>	Very good	
<b>7</b>	<b>61-70</b>	Good	
<b>6</b>	<b>51-60</b>	Passing	
<b>5</b>	<b>Less than 51</b>	Failing	