Course Unit Descriptor

Study Programme: Production Engineering			
Course Unit Title: Reverse Engineering and CAQ			
Course Unit Code: P1508			
Name of Lecturer(s): Budak Igor			
Type and Level of Studies: Bachelor level			
Course Status (compulsory/elective): compulsory			
Semester (winter/summer): Winter/Summer			
Language of instruction: English			
Mode of course unit delivery (face-to-face/distance learning): Face-to-face			
Number of ECTS Allocated: 6			
Prerequisites: None			
Course Aims: Mastering the basic knowledge of the application of reverse engineering modeling and implementation of CAQ system.			
Learning Outcomes: Ability to apply Reverse Engineering for modeling and CAQ system.			
Syllabus: Interpretation of the concept of reverse engineering. The role and importance of reverse engineering (RE) in an integrated design and manufacturing. The ability to integrate RE with other advanced techniques and technologies for product design RP and RT. Reverse Engineering Methodology. 3D digitizing - Definition and methods. Pre-processing of the results of 3D digitizing (filtering data-points, data-points smoothing, reducing data-points, segmentation of data-points). Surface reconstruction - generating CAD model. General aspects of quality management - CAQ systems. Control and management of computer aided processes. Computer aided quality. System components and CIM. CMM integration into different manufacturing systems. Inspection of geometrical product specifications. 3D-digitization in the product inspection. CAD-inspection and CAD-to-part inspection.			
Required Reading: Relevant literature in English TBD			
Weekly Contact Hours:	**Lectures:**	**Practical work:**	
Teaching Methods: Lectures are realized interactively through lectures, laboratory and computer practical classes. In lectures theoretical part is presented with characteristic examples for better understanding of subject content. In auditory practical classes, characteristical exercises are covererd. Acquired knowledge is practically applied in laboratory practical classes using avalilable laboratory equipment. Apart from lectures and practical classes, consultations are held regularly			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	**Final exam**	points
Group Assignment		Examination Assignment	
Exercises			
Test			
Test			

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.