Course Unit Descriptor

Study Programme: Production Engineering			
Course Unit Title: Rapid Prototyping and Rapid Tooling			
Course Unit Code: P2407			
Name of Lecturer(s): Lužanin Ognjen, Dragiša Vilotić			
Type and Level of Studies: Master 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: 5			
Prerequisites: None			
Course Aims: Acquiring knowledge in the field of contemporary technologies of rapid prototyping and tool making, their application in new product development and in other fields.			
Learning Outcomes: Upon passing this exam students are expected to know the fundamental paradigm of contemporary product development, basic application of rapid prototyping and tool making including necessary equipment and main criteria for rapid prototyping and tool making			
Syllabus: Introduction. New trends in product development. Role of physical modelling in product development. Types of models (conceptual models, design models, preserial models). RAPID PROTOTYPING AND RAPID TOOLING technologies. Types of RP and RT procedures. Procedcures on the basis of model solidification. Procedures on the bases of discrete particles merging. Procedures on the bases of solid materials. Polymerisation of solid foils. Procedures of post processing. Equipment for RP and RT. Modelling materials. Applicationo of RP and RT. Mechanical industry. Architecture. Medicine. Art. Other aspects of RP and RT technologies applications. (economical aspect, aspect of human environment protection, criterial for procedure selection).			
Required Reading: Relevant literature in English TBD			
Weekly Contact Hours:	**Lectures:**	**Practical work:**	
Teaching Methods: Lectures are realized with active student participation in lectures and practical classes. In lectures firstly reasons for this technology application is presented, then Modelling products and tools methods and than individual methods for rapid prototyping and rapid tooling are presented. In practical classes models of products and tools are designed and printed on rapid prototyping system in laboratory. Possible issues are discussed in consultations in separate term.			
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.			