Course Unit Descriptor

Study Programme: Production Engineering			
Course Unit Title: Fixtures			
Course Unit Code: P306			
Name of Lecturer(s): Vukelić Đorđe			
Type and Level of Studies: Bachelor level			
Course Status (compulsory/elective): compulsory			
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: The goal of course is to master skills in the field of selection, calculation and exploitation of fixtures, that enable the student to perform the procedure independently in practice. The aim of the course is that engineering gain competence to apply advanced tools for management of fixtures.			
Learning Outcomes: Students will be able for independent selection, calculation and exploitation of fixtures. Students gain competence in defining strategies of fixtures management in the various processes of engineering.			
Syllabus: General of fixtures. Definition, place and role of fixtures. Fixtures concepts, and their features and application. The basic elements of fixtures - locating elements, clamping elements, fixture body elements, tool guiding elements, tool aligning elements, connecting elements, add-on elements (elements for bridging height and length distances, elements for fixture manipulation, elements for fixture positioning on machine tool, elements for attaching fixtures to machine, securing elements, translating elements, rotating elements). The influential factors and the basic rules in fixtures design. Mechanization and automation of fixtures. Selection, implementation and exploation of fixtures. Universal fixtures. Fixtures for group technology. Modular fixtures. Phase-change fixtures. Fixtures for assembly. Fixtures for disassembly. Fixtures in metrology and quality control. Fixtures for coordinate measuring machines. Fixtures for additive manufacturing. Fixtures for welding. Fixtures for soldering. Fixtures for handling. Fixtures for precision engineering. Fixtures in flexible manufacturing systems. Fixtures in medicine and dentistry.			
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.			