Course Unit Descriptor

Study Programme: Industrial Engineering

Course Unit Title: Assembly Technologies

Course Unit Code: II1012

Name of Lecturer(s): Zoran Anišić

Type and Level of Studies: Bachelor level

Course Status (compulsory/elective): compulsory

Semester (winter/summer): winter

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 aim of the course is to introduce students to technologies and systems for joining parts and components to be able to design assembly process plans and assembly systems for different products.

Learning Outcomes:

After completing the course and passing the exam, the student is able to make the product structure, the necessary assembly operations, and defines an optimal sequence of their execution. He/she has to be able to accomplish the design and assembly process plans for for manual, robotic and automated assembly operations, and to conect individual workplaces/cells in a complex system. The student is also able to assess the cost and time of operations.

Syllabus:

Basic parameters that affect the process of assembly. The influence of product structure on the assembly process. DFA methodology for assessing the suitability of the product for assembly. Structuring products. Analysis of the characteristics of products and production program. Selection of variants of the assembly process. Determination of the number and sequence of the intervention - the network diagram. The level of specialization. Determination of the time and cost of operations. Making technological maps for each operation. Assembly systems design for manually, automated and robotic assembly. The choice of standard elements. Design of non-standard elements (tools, fixtures, etc.). Design of complex technological systems for assembly. Selection of material handling and storage. Shaping the spatial structure of the assembly system.

Required Reading: Relevant literature in English TBD

Weekly Contact Hours:-	**Lectures:-**	**Practical work:-**

Teaching Methods:

Teaching is done in auditorily lectures, followed by slides and films related to the lesson. The exercises are performed in groups of three students who have the task of designing the assembly system and process for a given product. Practical exercises are carried out in the laboratory for assembly systems under real conditions.

Knowledge Assessment (maximum of 100 points):100

Pre-exam obligations	points	**Final exam**	points
Project	50	Theoretical Part of the Exm	30
Laboratory Exercises	5		

Attendance			
Test	10		
Lecture Attendance	5		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			