Study program : Mechanical Engineering

Type and level of studies: Master Academic Studies

Course unit: Industrial design

Teacher in charge : PhD Lozica Ivanović

Language of instruction: English

ECTS: 6

Prerequisites: None

Semester: Summer Semester

Course unit objective

The main objective of the course is to achieve the necessary skills and knowledge in the field of industrial design, as well as the application of acquired knowledge in the development, design and verification product design solutions. Mastering the methodologies and principles of products design from the standpoint of functionality, aesthetic requirements, reliability and safety, quality, production characteristics, economic feasibility. The aim of the course is the development of creative abilities of students in defining ideas for new products and their introduction to the design and methods of product development.

Learning outcomes of Course unit

Student who pass this course acquires the ability of creative alignment factors from idea to new solutions within product development. Students will be trained in using the methods and procedures of design, in teamwork or independently, working on designing products with the use actual computer tools.

Course unit contents

Theoretical classes

Methodology of design. The essence, the aims, the concept. Theory, history and definition of industrial design. The place of industrial design in the process of constructing. Form and contents. Shapes, proportions and similarities in nature and their influence on the development of industrial design. Material and the process of production, ecological aspect. Color, ornament and other artistic elements. Function, aesthetic factor, ergonomy, anthropometry. The influence of the production method and technology on design. The role and the aims of design in product development. The evaluation of design. Forming the following documentation.

Practical classes

Exercising of basic aesthetic elements and principles in industrial design. Training and working in software package AUTODESK INVENTOR. Principles of shape modeling on a computer. Product designing with the use of concrete measures for product improvement.

Literature

1. **Urlich K. T., Eppinger, S. D.: Product Design and Developement, Mc Graw Hill, 2003.**
2. **Pitts G.: Techniques in Engineering Design, London Butterworths, 1973.**
3. **Kirck E. V.: An Introduction to Engineering and Engineering Design, John Wiley and Sons, Inc, 1969.**

Number of active teaching hours				**Other classes**
Lectures:	Practice:	Other forms of classes:	Independent work:	
2	2	0	0	**0**

Teaching methods

Examination methods (maximum 100 points)

Exam prerequisites	**No. of points:**	**Final exam**	**No. of points:**
Student's activity during lectures	**5**	oral examination	**30**
practical classes/tests	**15**	written examination	**0**
Seminars/homework	**30**	.....	
Project	**20**		
Other	**0**		

Grading system

Grade	**No. of points**	**Description**
10	**91-100**	Excellent
9	**81-90**	Exceptionally good
8	**71-80**	Very good
7	**61-70**	Good
6	**51-60**	Passing
5	**≤50**	Failing