Study program: Industrial engineering – Mechanical engineering

Course title: Product Development

Professor/assistant: Grubiša Miodrag

Type of course: Elective

ECTS credits: 6

Prerequisites: none

Aims of the course:

Students gain knowledge about product development processes and master them (design, construction, making prototypes, testing, homologation) with the purpose of applying engineering methods in developing new products or improving the existing one.

Learning outcomes:

The student plans product development, uses software methods to construct parts and assemblies, selects optimal materials and technological procedures, makes prototype documentation, performs static and dynamic testing of products.

Syllabus:

Theoretical part:

Planning product development and elaboration of technical tasks. Tasks of integral approach to product development. The phases of product development throughout the life cycle. Identification of product development potentials. Designing the structure. Forming the structure and detailed constructing. Research related to functional, technical and other product requirements. A cost model for product development and maintenance throughout the life cycle. Cost analysis of product realization. Determining product specifications. Translating user requests into functional characteristics of a product. Product, assembly and sub-assembly plans. Production of prototypes. Preparing and managing documentation. Patents and intellectual property. The use of intellectual property in product development.

Practical part:

Practical exercises, solving practical problems, preparation of term papers.

Literature:

1. N. Marjanović: Metode razvoja proizvoda, Pisani materijal, Kragujevac 2013.
2. V. Miltenović: Razvoj proizvoda – strategije, metode, Mašinski fakultet Niš 2003.
3. Z. Anišić: Integralni razvoj proizvoda VTŠSS Subotica 2006.
4. Z. Anišić: Razvoj i menadžment proizvoda u toku životnog ciklusa, FTN Novi Sad 2011.

Total number of active classes: 75	**Lectures:** 45	**Practical classes:** 30

Teaching methods:

Interactive lectures, auditory exercises, calculating and graphic exercises, video presentations, display of constructions and calculations, solving tasks, consultations, preparation of term papers.

Grading system (maximum 100 points)

grading scale from 5 to 10: below 51 points grade 5, grade 6 from 51- 60 points, grade 7 from 61-70 points, grade 8 from 71-80 points, grade 9 from 81-90 points, grade 10 from 91- 100 points.

Pre-exam obligations:	**Points:**	**Final exam:**	**Points:**
Activity during lectures	max 5	Written exam	50
Practical training	max 5		
Written test(s)	max 20		
Term papers	max 20		
Minimum requirement for the final exam	30		