Study program: Industrial Engineering – Mechanical Engineering

Course title: Engineering and Innovations

Professor/assistant: Šarenac O. Milovan

Type of course: Elective

ECTS credits: 6

Prerequisites: none

Aims of the course:

Strong competition is present in the globalized economy. The growth of competitiveness is achieved by applying technological innovations based on knowledge. Competitive engineering requires new constructive parameters and new technologies which have roots in interdisciplinary cooperation of different research areas: competitive engineering, production, materials management, quality management and marketing.

Learning outcomes:

Design based on the principles of competitive engineering ensures that the right product reaches the right customer at the right time. Configuration management implies accuracy in all of the phases of products life.

Syllabus:

Theoretical part:

Optimization. Engineering modeling. Innovative processes. Normative factors for the protection of the patent. Competitive engineering. System reliability management in mechatronics. The experiment in engineering. Sensors and their application in industrial robots.

Practical part:

Term papers

Literature:

1. Lambić, M. i dr., Inženjerstvo i inovacije u praksi, TF "Mihailo Pupin", Zrenjanin, 2006.
2. Radović, M., Karapandžić, S., Inženjering procesa, FON, Beograd, 2007.
3. Jocković, M., Ognjanović, Z., Stanković, M., Veštačka inteligencija, inteligentne mašine i sistemi, Krug, Beograd, 1997.
4. Papić, Lj., Šarenac, M., Upravljanje pouzdanošću sistema u mehatronici, Istraživački centar za upravljanje kvalitetom i pouzdanošću, Prijevor, 2008.

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

Teaching methods: Lectures, auditory exercises and 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	Oral exam	50
Practical training	max 5		
Written test(s)	max 20		
Term papers	max 20		
Minimum requirement for the final exam	30		