Study program: Mechanical Engineering

Type and level of studies: MSC

Course unit: Methods for Quality improvement

Teacher in charge: Aleksandar Aleksic, Snezana Nestic

Language of instruction: English

ECTS: 6

Prerequisites: no

Semester: *Winter semester*

Course unit objective:

The objective of the course is to familiarize students with the significance the statistical methods of quality control, quality of basic tools and methods and techniques to improve quality, as well as designing the process of improving quality.

Learning outcomes of Course unit

At the end of the course students are expected to be able to: apply basic SPC methods of quality control, quality basic tools, methods and techniques for improving the quality, design procedures to improve quality, determined activities and measures to improve quality, ensure a high level of capacity processes and equipment apply modern software solutions in the areas of SPC methods and quality tools, methods and techniques to improve quality, etc.

Course unit contents

Theoretical classes

Improving the quality. Methods of improving the requirements of QMS standards, tools and techniques of quality. Basis of statistical methods of control. Mathematical Statistics. Defined and natural tolerance. Method of control charts (control charts, charts parameters, the statistical monitoring of the quality of material and products). Statistical receiving control. Basic quality tools (forms for collecting data, data stratification, histograms, scattering diagrams, Pareto diagrams, Ishikawa diagrams, control charts). Additional quality tools. The importance of improving quality. Methods of improving the quality of (management processes, reactive and proactive improvement). Methods and techniques of quality. Method of seven steps to improve quality. Benchmarking. Methods and techniques of assessment of skills and equipment. Six sigma method.

Practical classes

Calculating the exercise include the practical work of students on the application of statistical methods and quality tools, methods and techniques to improve quality and modern software tools in the field of SPC methods and improving quality. Project tasks from the application of statistical methods and quality tools, skills assessment processes and methods to improve quality.

Literature

[1] Tague, N. R. (2015). The quality toolbox. Milwaukee, WI: ASQ Quality Press

Number of active teaching hours				**Other classes 1**
Lectures: 3	Practice: 2	Other forms of classes: mentoring system	Independent work: 0	

Teaching methods

Teaching is comprised of lecturing by the use of modern teaching resources - video presentations and educational films and oral exercises. Evaluation of knowledge: tests and seminar.

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	**30**	written examination	
Seminar/homework	**15**	.....	
Seminar presentation	**20**		

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