

# Qualimetry of electrical products

## Course description

The electrical output is to meet certain standards of quality, and one of the main challenges for the manufacturing companies is to keep to these quality standards under the certain time and budget constraints set by a project. Quantities assessment of a product quality has a lot to do with marketing of this product. This is the reason for us to divide the course into two main parts: fundamentals of qualimetry and industrial marketing based on qualimetry. We will deal with some real-life case studies, and then students will get a chance to apply the theory to practice while working on three course projects.

## Learning objectives

Upon completion of this course, a student is expected to:

a) know:

- technical solutions in electrical engineering;
- fundamentals of budgeting for the enterprise;
- basics of industrial marketing;

b) be able to:

- find effective technical and economic solutions for modern projects;
- plan the work of a real enterprise;
- conduct a comprehensive analysis of professional activities.

c) have a good command of:

- main technologies for checking the electrical products quality.
- methods for assessing the enterprises and projects competitiveness

## Workload, types of instructional activities, the contents of the discipline

The course is worth 3 ECTS credits or 102 hours which include 52 hours of lectures, 20 hours of the supervised practical classes and lab classes, 30 hours of self-study involving training for laboratory and practical classes (workshops), training for the examination and exam taking.

### Categories of the discipline, the types and scope of training

Section number	Name of sections, topics of the discipline	Workload according to the types of work (hours)			
		total	L (lectures)	WS (workshops)	LC (lab classes)
1	Fundamentals of qualimetry: qualimetry, metrology and standardization. Quality quantification in systems engineering. The science of quality and the science of measuring quality.	36	30	6	

2	Industrial marketing: a history of marketing. Marketing concepts.	20	12	8	
3	Implemented industrial marketing projects.	16	10	6	
Total		72	52	20	

### Contents of the sections, topics of the discipline

Section number	Name of sections	Contents of sections
1	Qualimetry, metrology and standardization	1. Qualimetry. The science of quality and the science of measuring quality. Basic terms and concepts. Measurement and evaluation. Measurement as a comparison with a generally accepted standard. Evaluation, as a comparison with a specially selected base value.
1		2. Quality indicators. Single quality indicators. Comprehensive quality indicators. Integral quality indicators. Methods for assessing quality indicators. Registration. Calculation. Organoleptic method.
2	Industrial marketing	3. History of marketing. Marketing concepts. Production concept. Commodity concept. Sales concept. Consumer and industrial marketing. Market models. Competitiveness in the global market.
2		4. Marketing environments. External microenvironment. External macro environment. Internal environment. Marketing research. Research Methods. System analysis and integrated approach. Market research: consumers and competitors.
3	Implemented industrial marketing projects	Innovative projects in industry and energy

### Contents of the workshops

Number of WS	Section number	Title and summary of the lesson	Number of hours
1	1	Qualimetry, metrology and standardization. The science of quality and the science of measuring quality	2
2	1	Quality indicators. Single quality indicators.	2
3	1	Comprehensive quality indicators. Integral quality indicators	2
4	2	Industrial marketing	4
5	2	Marketing concepts	2
6	2	Marketing environments	2

7	3	The project: <i>Traction electric drive for a self-propelled car in the mining industry</i>	2
8	3	The project: <i>Optimization in heat supply systems</i>	2
9	3	The project: <i>Computer diagnostics in cardiology</i>	2