

## DESCRIPTION OF Curricula/Module

TITLE OF THE MODULE	Code
Quality Engineering	-

Teacher(s)	Department
<b>Coordinating:</b> associate professor A.A.Salmin <b>Others:</b>	Information systems and technologies

Study cycle	Level of the module	Type of the module
Second semester of each academic year		Compulsory

Form of delivery	Duration	Langage(s)
Lecture and practice	16 weeks	Russian

Prerequisites	
<b>Prerequisites:</b> Mathematics, technology	<b>Co-requisites (if necessary):</b>

Credits of the module	Total student workload	Contact hours	Individual work hours
3	108	54	54

Aim of the module (course unit): competences foreseen by the study programme		
Efficient use of quality improvement and problem solving tools and statistical methods in quality assurance. Understanding the quality tools and developing and practicing quantitative skills.		
Learning outcomes of module (course unit)	Teaching/learning methods	Assessment methods
On successful completion of the module, students will know the notion of quality, its history and importance, definitions, basic principles, and its impact on competitive advantage and financial return;  will understand generalities and terminology: control loop, the signals, process chain, correcting element and so on;  will be able to simulate the processes with followed by their control	Discussion, case study, individual and group work, individual scientific literature study, problematic and project learning methods, presentation, research report preparation	Individual case study, exam

Themes	Contact work hours	Time and tasks for
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								individual work	
	Lectures	Consultations	Seminars	Practical work	Laboratory work	Placements	Total contact work	Individual work	Tasks
1. Generalities and terminology What is control engineering, structure of a control loop, the signals, process chain, block diagram	4			2			6	6	<p>Notion of quality, its history and importance, definitions, basic principles, and its impact on competitive advantage and financial return.</p> <p>Efficient use of quality improvement and problem solving tools and statistical methods in quality assurance.</p> <p>Understanding the quality tools and developing and practicing quantitative skills.</p>
2. The quality and management system Quality measurement, quality of design and performance, quality of conformance	4			2			6	6	
3. Process Introduction, first order examples, responses, time constant	4			8			12	12	
4. Correcting element Introduction, composition, valve positioner	4			8			12	12	
5. Controller Needs and demands, auto-man, process characteristic, proportional functioning, exercise, proportional control of a first-order system, the integral and the differential action, optimize	6			12			18	18	
<b>Total</b>	<b>22</b>			<b>32</b>			<b>54</b>	<b>54</b>	

Assessment strategy	Weight in %	Deadlines	Assessment criteria
Running control I	25	6 <sup>th</sup> week	Attendance, activity, study cases and scientific articles
Intermediate control II	20	9 <sup>th</sup> week	Writing exam
Running control II	25	12 <sup>th</sup> week	Attendance, activity, study cases and scientific articles
Final exam	30	16 <sup>th</sup> week End of curricula	Writing exam

Author	Year of issue	Title	No of periodical or volume	Place of printing. Printing house or internet link
<b>Compulsory literature</b>				
Салимова Т.А.	2008	Управление качеством: учебник для вузов		Омега-Л. Москва
Карпенко Е. М.	2007	Менеджмент качества: учеб.		ИВЦ Минфина. Минск

		пособие		
Клячкин, В. Н.	2007	Статистические методы в управлении качеством: компьютерные технологии: учеб. пособие		Финансы и статистика. Москва