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ФИО: Ястребов Олег Александрович
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Federal State Autonomous Educational Institution for Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA NAMED AFTER PATRICE
LUMUMBA
(RUDN University)

Higher School of Industrial Policy and Entrepreneurship

(faculty/institute/academy - the higher education program developer)

COURSE SYLLABUS

Standardization and Quality Management

(name of the discipline/module)

Recommended by the Didactic Council for the Education Field of:

38.04.02 Management

(field of studies / speciality code and title)

The study of the discipline is conducted as part of the professional program of higher education.

Engineering Management

(name (track/specialization) of professional program of higher education)

1. THE GOAL OF THE DISCIPLINE

The goal of mastering the *Standardization and Quality Management* discipline is the study of theoretical foundations and practical tools for the optimal organization of quality management at enterprises to prevent sporadic quality and ensure the subsequent development of a system that meets the recommendations of ISO 9000 International Standards and the requirements of Total Quality Management (TQM).

2. REQUIREMENTS FOR DISCIPLINE OUTCOMES

The mastering of the *Standardization and Quality Management* discipline envisages building the following competencies (parts of competencies) in students:

Table 2.1. The list of competencies acquired by students in the course of the discipline (outcomes of the discipline)

Competence Code	Competence Descriptor	Competence Formation Indicators (within this discipline)
GC-1	Ability to perform critical analysis of problematic situations based on the systemic approach and to develop a plan of action	GC-1.1 Analyzes the task and singles out its basic components GC-1.2 Defines and prioritizes the information needed to solve the task GC-1.3 Searches the information to solve the task by various types of queries GC-1.4 Offers solutions to the problem, analyzes the possible consequences of their use GC-1.5 Analyzes the ways of solving problems of worldview, moral and personal nature based on the use of fundamental philosophical ideas and categories in their historical development and socio-cultural context
GC-7	Capability to use digital technologies and methods of searching, processing, analyzing, storing and presenting information (in the professional field) in the context of digital economy and modern corporate information culture.	GC-7.1. Searches the necessary sources of information and data, perceives, analyzes, consolidates and transfers information using digital tools, as well as using algorithms when working with data obtained from various sources in order to use efficiently the information received for problem solving; GC-7.2. Assesses information, its reliability, makes logical thoughts based on incoming information and data;
PC-1	Capability to manage the efficiency of an investment project	PC-1.1 Defines the operations and their sequence to implement the investment project

3. THE PLACE OF DISCIPLINE IN HIGHER EDUCATION PROGRAM STRUCTURE

The *Standardization and Quality Management* discipline is an elective block formed by students.

Within the higher education program students also take other disciplines and / or internships that contribute to the achievement of the expected learning outcomes as results of mastering the *Standardization and Quality Management* discipline.

Table 3.1. The list of the higher education program components that contribute to the achievement of the expected learning outcomes as the disciplines results.

Competence Code	Competence description	Previous disciplines/modules, practices*	Subsequent disciplines/modules, practices*
GC-1	Ability to perform critical analysis of problematic situations based on the systemic approach and to develop a plan of action		Methodology of Management Problems Research Modern Strategic Analysis
GC-3	Ability to organize and manage a team developing a team strategy for achieving the set goal		Strategic Management in Industrial Companies
PC-1	Capability to manage the efficiency of an investment project		Strategic Management in Industrial Companies

4. SCOPE OF DISCIPLINE AND TYPES OF SCHOLASTIC WORK

The total workload of the discipline is 3 credits.

Table 4.1. Types of educational work according to the periods of mastering the higher education program for ***FULL-TIME*** students

Type of Educational Work		Total hours	Semesters			
			1/1	1/2		
1.	Classroom classes (total)	36	36			
	Including:	-	-			
1.1.	Lectures	18	18			
1.2.	Other activities					
	Including:					
1.2.1.	Seminars (C)	18	18			
	Practice training (PT)					
2.	Autonomous work (total)	63	63			
	Including:					
2.1.	Calculation and graphic works	-				
	<i>Other types of autonomous work</i>	63	63			
	Preparation and passing of midterm assessment	9	9			
3.	Total workload (acad.hours)	108	108			
	Total workload (credits)	3	3			

5. DISCIPLINE CONTENT

Table 5.1. The content of the discipline (module) by type of academic work

No	Name of the Discipline Section	Content of the Section (topics)	Type of Educational Work
1	The Concept of Quality. Product Quality Indicators System	<p>Quality is a success factor in a market economy. The discipline in education process.</p> <p>Quality and customer satisfaction.</p> <p>Definition of quality. Quality objects: activity or process; products (tangible and intangible); organization.</p> <p>Quality loop.</p> <p>The system of product quality indicators: generalizing, single and complex indicators.</p> <p>Classification of product quality indicators.</p>	Lecture, self study
2	Stages of the Formation of Modern Quality Systems	<p>The main quality management approaches: improvement achieved by innovation (kairio), and improvement obtained by continuous improvement (kaizen).</p>	Lecture, self study
3	The Concept and Methodology of Total Quality Management	<p>Definition of Total Quality Management (TQM). The basic principles and goals of TQM.</p> <p>The most important elements of TQM that ensure the success of the quality strategy: satisfying the needs and wishes of consumers; ensuring the real participation of each employee in the process of improving the product quality; improving organizational activities, making decisions based on facts, the role of top management.</p>	Lecture, self study
4	The Main Methods of Improving the Company's Operation	<p>Functional structure. Functional structure problems: functional structure separates staff from consumers; functional structure slows down process improvement.</p>	Lecture, self study
5	Deploying the Quality Function. House of Quality	<p>Quality profile. Basic, required and desired quality.</p> <p>Key elements of the Quality Function Deployment: customer requirements; quality parameters; the matrix of the closeness of the relationship between the components "what" and "how"; goal setting; establishment of the rating of the components importance.</p> <p>An example of building a House of Quality. The concept of a House of Quality.</p>	Lecture, self study
6	Economic Aspects of Quality Management	<p>Quality costs and their classification: costs of preventive actions; costs of inspection; costs of internal spoilage; costs of external spoilage.</p> <p>Return on quality cost. Relative shares of quality cost elements. The costs of quality and the "zero</p>	Lecture, self study

		defect" policy. Application of quality cost estimates. The goal of the quality economy.	
7	Standardization and Quality Management	<p>The concept of standardization. The main areas of standardization development. Traditional standardization and its main purpose.</p> <p>The main methods of standardization: alignment and aggregation. The concept of alignment. The main types of alignment: design and technological. The main areas of alignment: configurative and restrictive.</p> <p>Comprehensive, advanced and advanced standardization.</p>	Lecture, self study
8	International Quality Management Standards	<p>ISO 9000:2000 "Quality Management Systems. Fundamentals and vocabulary";</p> <p>ISO 9001:2000 "Quality Management Systems. Requirements";</p> <p>ISO 9004:2000 "Quality Management Systems. Guidelines for performance improvements".</p>	Lecture, self study
9	Ensuring the Functioning of Quality Systems	<p>The concept of quality audit. Audit elements: quality system, process, product, service. The main types of audit: internal audit, external audit, independent external audit.</p> <p>Quality system evaluation models: control-oriented evaluation and improvement-oriented evaluation.</p>	Lecture, self study

6. EQUIPMENT AND TECHNOLOGICAL SUPPORT OF THE DISCIPLINE

Table 6.1. Equipment and technological support of the discipline

Classroom Type	Equipment of the Classroom	Specialized Educational/Laboratory Equipment, Software and Materials for the Discipline (if necessary)
Lecture Hall	An auditorium for conducting lecture-type classes, equipped with a set of specialized furniture; a board (screen) and technical means of multimedia presentations.	21 workplaces: system unit P4 C2D/3160 MHz MB/ 320 GB/DVD±RW/ LCD monitor 19"+ 1 projector
Colloquium	A classroom for conducting colloquium-type classes, group and individual consultations, ongoing monitoring and midterm assessment, equipped with a set of specialized furniture and multimedia presentation equipment.	21 workplace: Celeron system unit/2600 MHz/1280 MB/ 40 GB/DVD ROM/ LCD monitor 17"+ 1 projector + WiFi access point
Computer Class	A computer classroom for conducting classes, group and individual consultations, continuous	21 workplace: Celeron system unit/2600 MHz/1280

Classroom Type	Equipment of the Classroom	Specialized Educational/Laboratory Equipment, Software and Materials for the Discipline (if necessary)
	control and midterm assessment, equipped with personal computers (___ pcs.), a blackboard (screen) and multimedia presentation technical means.	MB/ 40 GB/DVD ROM/ LCD monitor 17"+ 1 projector + WiFi access point
Autonomous Work of Students	A classroom for autonomous work of students (can be used for seminars and consultations), equipped with a set of specialized furniture and computers with access to EIEE.	21 workplaces: system unit P4 C2D/3160 MHz MB/ 320 GB/DVD±RW/ LCD monitor 19"+ 1 projector

7. INFRASTRUCTURE AND INFORMATIONAL SUPPORT NECESSARY FOR THE DISCIPLINE

a) Main Readings:

1. *Vasin, S. G.* Upravlenie kachestvom. Vseobshchii podhod. [Quality management. Comprehensive approach] : textbook for universities / S. G. Vasin. — Moscow : Yurayt Publishing House, 2023. — 404 p. — (Higher education). — ISBN 978-5-534-16393-3. — Text : electronic // Yurayt Educational Platform [website]. — URL: <https://urait.ru/bcode/530932>

2. *Gorbashko, E. A.* Upravlenie kachestvom [Quality management]: textbook for universities / E. A. Gorbashko. — 4th ed., reprint. and add. — Moscow : Yurayt Publishing House, 2023. — 397 p. — (Higher education). — ISBN 978-5-534-14539-7. — Text : electronic // Yurayt Educational Platform [website]. — URL: <https://urait.ru/bcode/510566>

b) Additional Readings: _

1. <http://www.iso.org.ru>
2. <http://www.qualitydigest>.
3. <http://www.deming.boom.ru>

Periodicals

4. Business excellence.
5. Methods of quality management.
6. Standards and quality.

Resources of the Internet information and telecommunication network:

1. Electronic libraries (EL) of RUDN University and other institutions, to which university students have access on the basis of concluded agreements

- RUDN Electronic Library System (RUDN ELS) <http://lib.rudn.ru/MegaPro/Web>
- EL "University Library Online" <http://www.biblioclub.ru>
- EL "Yurayt" <http://www.biblio-online.ru>
- EL "Student Consultant" www.studentlibrary.ru

2. Databases and search engines:

- electronic foundation of legal and normative-technical documentation <http://docs.cntd.ru/>
- Yandex search engine <https://www.yandex.ru/>
- Google search engine <https://www.google.ru/>
- SCOPUS abstract database <http://www.elsevierscience.ru/products/scopus/>

The following training toolkit for the student's autonomous work is envisaged as part of mastering

the discipline/module*:

1. A course of lectures on the *Standardization and Quality Management* discipline.
2. Laboratory workshop on the *Standardization and Quality Management* discipline](if laboratory work is available).
3. Methodological guidelines for drafting and formatting the course paper / project on the *Standardization and Quality Management* discipline (if there are ones).

8. ASSESSMENT TOOLKIT AND GRADING SYSTEM FOR COMPETENCES LEVEL EVALUATION

The assessment materials and the grading system* to evaluate the graduate's level of competences (part of competences) formation as the results of the *Standardization and Quality Management* discipline are specified in the Appendix to course syllabus.

DEVELOPERS:

Associate Professor of the
Applied Economics Department

V.A. Ermakov

Signature

Position, educational department

Name, surname

HEAD OF EDUCATIONAL DEPARTMENT:

Deputy Head of the Applied
Economics Department

A.A. Chursin

Signature

Name of the educational department

Name, surname

Program Manager

Associate Professor

of the Applied Economics Department

A.A. Ostrovskaya

position, name of the department

signature

Name, surname

Annex

Methodological guidelines for students on mastering the discipline (module)

The implementation of the course provides interactive lectures, practical classes (colloquiums) using multimedia equipment, preparation of autonomous creative projects and their subsequent presentations, testing, group discussions on the subject of the course, modern knowledge control technologies.

While studying the discipline, the student must attend a course of lectures, participate in the number of colloquiums provided by the course syllabus, study autonomously some topics of the course and confirm their knowledge during control activities.

The student's work in lectures consists in clarifying the basics of the discipline, briefly taking notes of the material, and clarifying issues that cause difficulties. The lecture notes are the basic educational material along with the textbooks recommended in the main list of readings.

The teaching of the main part of the lecture material involves usage of multimedia tools that facilitate the comprehension and consolidation of the material. Presentations are available for download from the RUDN website and can be freely used by students for educational purposes.

The student must master all the topics provided for by the educational and thematic plan of the discipline. Individual topics and training issues must be mastered autonomously. The student studies the recommended literature, briefly outlines the material, and clarifies the most difficult questions that require clarification during consultations. The same should be done with sections of the course that were skipped due to various circumstances.

For an in-depth study of the issue, the student should study the literature from the additional readings list and specialized websites. It is also recommended that students communicate in professional community forums.

Students study educational, scientific literature and periodicals on an autonomous basis. They have the opportunity to discuss what they have read with the teachers of the discipline during scheduled consultations, with other students at colloquiums, as well as at lectures, asking the professor questions.

The control of autonomous work is carried out by the professor in charge. Depending on the teaching methodology, the following forms of continuous assessment can be used: a short oral or written survey before the start of classes, tests, control papers, written homework, essays, etc.

GC-1, GC-7, PC-1		Credit											20	20	20
		TOTAL													100

Applied Economics Department

Approximate report topics

1. Stages of quality management development.
2. Comprehensive (total) quality management.
3. Appointment and structure of ISO 9000 standards.
4. The main elements of the quality system recommended by ISO 9000.
5. Product certification: purpose and procedure.
6. Certification of quality systems: purpose and procedure.
7. Quality Control Methods.
8. Quality planning.
9. Quality management.
10. Statistical methods of product quality control.
11. Japanese experience in quality management.
12. Fundamentals and organization of metrological quality assurance.
13. The role of standardization in quality management.
14. The human factor in quality management.
15. Quality circles.
16. Audit of quality systems.
17. Development of a "Quality Manual" and a quality program.
18. Certification schemes.
19. Technical control departments and their purposes.
20. Policy and organization of work in quality planning.
21. Economic aspects of quality management.
22. Indicators of the quality planning efficiency.
23. Seven quality control tools in the Japanese economy.
24. National Quality Awards

Examination Cards

Standardization and quality management discipline

EXAMINATION CARD No. 1

1. The concept of quality, the quality of products, production and company
2. Quality Management Tools. Control sheets.

Compiled by _____ Tarmzhanova R.Sh. _____
(signature)

Head of the department _____ Chursin A.A. _____
(signature)

EXAMINATION CARD No. 2

1. Quality Systems Certification: tasks, principles, procedure.
2. Purpose and use of arrow charts

Compiled by _____ Tarmzhanova R.Sh. _____
(signature)

Head of the department _____ Chursin A.A. _____
(signature)

As part of the exam, the level of mastering all the competencies of the discipline can be controlled (depending on the question).

The set of examination cards includes assessment criteria for the discipline developed by the teacher and approved at the meeting of the department.

Criteria for assessing of answers to exam questions:

The answer to each exam is valued from 0 to 10 points:

Answer Assessment Criteria:	Scores		
	The answer does not meet the criteria	The answer partially meets the criteria	The answer fully meets the criteria
The answer is correct	0	1	2
The student answers without suggestive questions from the examiner	0	0.5	1
The student practically does not use the prepared draft	0	0.5	1
The answer demonstrates the student's confident command of the terminological and methodological apparatus of the discipline	0	1	2
The answer has a clear logical structure	0	1	2
The answer demonstrates the student's understanding of the connections between the subject of the question and other sections of the discipline and/or other disciplines	0	1	2

This Program has been developed in line with the requirements of the RUDN University Educational Standards.

Developers:

Senior Lecturer of the Applied Economics Department _____ Tarmzhanova R.Sh.
position, name of the department signature Name, surname

HEAD OF EDUCATIONAL DEPARTMENT:

Deputy Head of the Applied
Economics Department



A.A. Chursin

Name of the educational department

Signature

Name, surname

Program Manager
Associate Professor

of the Applied Economics Department
position, name of the department

signature



A.A. Ostrovskaya
Name, surname