Federal State Autonomous Educational Institution for Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
RUDN University

Higher School of Management

educational division (faculty/institute/academy) as higher education programme developer

COURSE SYLLABUS

Fundamentals of Logistics and Supply Chain Management

course title

Recommended by the Didactic Council for the Education Field of:

38.04.02 Management

field of studies / speciality code and title

The course instruction is implemented within the professional education programme of higher education:

Engineering Management

higher education programme profile/specialisation title

2026

1. COURSE GOAL(s)

The goal of mastering the *Fundamentals of Logistics and Supply Chain Management* discipline is to introduce of the history of the creation and development of logistics as a science, its fundamentals and technologies, to show its place in the modern economic disciplines system, as well as its role in the formation of global, macro- and micrologistic systems in the economy;

2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the *Fundamentals of Logistics and Supply Chain Management* discipline envisages building the following competencies (parts of competencies) in students:

Table 2.1. List of competences that students acquire through the course study

Competence code	**Competence descriptor**	**Competence formation indicators** (within this course)
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-2	Ability to manage a project at all lifecycle stages	GC-2.1 Specifies a problem, the solution of which is linked to the achievement of the project goal GC-2.2 Defines the links between the tasks set and the expected outcomes of their solution GC-2.3 Determines the available resources and limits, the valid legal norms within the framework of the tasks GC-2.4 Analyzes the project implementation schedule and chooses the best way to solve the tasks, based on the current legal norms and available resources and limitations GC-2.5 Monitors the progress of the project, adjusts the schedule in accordance with the results of the control
PC-3	Ability to manage organizations, departments, groups (teams) of employees, projects and networks	PC-3.1 Applies various organization management techniques existing in Russia and abroad PC-3.2. Uses generally accepted standards for effective interaction within the organization

3.COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The *Fundamentals of Logistics and Supply Chain 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 *Fundamentals of Logistics and Supply Chain 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 descriptor	Previous courses/modules*	Subsequent courses/modules*
GC-1	Ability to perform critical analysis of problematic situations based on the systemic approach and to develop a plan of action	Economics and Management of Energy & Environment Engineering Innovations	Master's Degree R&D Pre-graduation Practice Preparing for defense and defense of the degree thesis
GC-2	Ability to manage a project at all lifecycle stages	Strategic Management in Industrial Companies	Master's Degree R&D Pre-graduation Practice Preparing for defense and defense of the degree thesis
PC-3	Capability to manage the efficiency of an investment project	Marketing and Competitiveness Management	Master's Degree R&D Pre-graduation Practice Preparing for defense and defense of the degree thesis

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the discipline is 3 credits.

*Table 4.1. Types of academic activities during the periods of higher education programme mastering (**full-time training**)**

Type of academic activities		Total academic hours	Semesters/training modules			
			1	2	3	4
Contact academic hours		*36*			*36*	
including:						
Lectures (LC)		18			18	
Lab work (LW)						
Seminars (workshops/tutorials) (S)		18			18	
Self-studies		*63*			*63*	
Evaluation and assessment (exam/passing/failing grade)		*9*			*9*	
Course workload	academic hours_	**108**			**108**	
	credits	**3**			**3**	

5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

Course module title	Course module contents (topics)	Academic activities types
Subject 1. Conceptual Foundations of Logistics	Origins of logistics. Definition, concept, tasks, functions, objects of research. Types of logistics, macro- and micrologistics. Methodology and scientific base of logistics, interaction with other sciences, the essence of a systematic approach. Economic compromises as a method of balancing expenses, income and profits of firms.	LC, S

	Logistic costs, their role in the formation of the final cost of products (M. Porter's pyramid of total cost). The role of logistics in increasing the competitiveness of the company, the 7Rs of logistics. Logistics concepts and their evolution (pre-historical period, classical logistics, integrated logistics, supply chains). Logistics features in globalization and the main trends of its development. The outsourcing development. Functional areas of logistics and their characteristics: procurement logistics, production, sales, transport logistics. Levels of company logistic development: transportation and storage, distribution, integrated logistics.	
Subject 2. Types of Logistic Flows	Definition of the logistic flow. Types of logistic flows: material, financial, information and service. Parameters of logistic flows. Logistic operations.	LC, S
Subject 3. Characteristics of Logistic Systems	Logistic systems definition and properties. Territorial logistics systems. Types of logistic systems. Enterprise as a logistics system. The concept of logistics chain and its key elements: link, chain and channel. The scheme of links interaction of a simple logistic system on commodity, information and financial flows. Logistics life cycle.	LC, S
Subject 4. Procurement logistics	Tasks and functions of procurement logistics. The mechanism of procurement logistics work, the procurement cycle structure, needs identification, procurement planning, preparation and placement of orders, monitoring of order fulfillment and control of fulfillment and/or forwarding of orders. Concepts of interaction with suppliers. Selection of logistics intermediaries using expert methods and multi-criteria assessments, supplier ratings calculation. Legal basis of procurement: proposals receipt and assessment, terms of delivery, order and deliveries paperwork, procurement methods, incoming quality control and quantity of products received, payment for deliveries. Development of procurement strategy and interaction with suppliers, features of procurement of goods of different value groups (ABC), procurement in a free and monopolized market. The practice of "kickbacks" in the procurement activities of Russian enterprises and its economic consequences.	LC, S
Subject 5. Production logistics	Production as a process of making goods. The purpose and objectives of production logistics. The dependent demand principle. Principles of production organization: specialization,	LC, S

	flexibility, synchronization, optimization, integration. Concept and evaluation of production capacity, Concepts of logistics processes organization: "just in time", "push" and "pull" systems. The essence, advantages and disadvantages of MRP-II, LP, Kanban, DRP methods, etc. Stages of production planning in MRP-II method: drafting of a production schedule, planning of full and net resource requirements, production cycle of product manufacturing, planning of technological equipment utilization. The main production schedule. ERP systems, prospects for the development of resource planning systems.	
Subject 6. Transport logistics	The essence of forwarding services, challenges and participants of transport logistics. Characteristics of different types of transport. Transport systems classification. Unimodal, intermodal, multimodal, combined and terminal cargo transportation. The key terminology of transport logistics: trip, turnover, transport route, transport work, cargo class, etc. Methods of visual representation of the material flows movement (MP): cartograms, squinted tables, MP curves. Road transport customer service. Technical and operational performance indicators of road transport on routes. General indicators of the efficiency of the rolling stock exploitation: load factors, mileage utilization factors, average distance of cargo transportation, etc. Transport challenges and their types. Vehicles route calculation. Simplified algorithms for solving typical transport problems: Vogel approximation, imaginary beam method (Svir method), "branches and boundaries" method. General algorithm for freight transport route calculation. Planning of cargo delivery in a mixed traffic based on a network schedule. Organization and calculation of the supply system "just in time", scope of application, pros and cons. Legal support of cargo transportation in the Russian Federation: legal framework, basic shipping documents. International agreements in the cargo transportation area: INCOTERMS, General Agreement on Trade and Tariffs, CMR Convention, FIATA, etc.	LC, S

Subject 7. Warehouse logistics	Warehousing of products within the logistic system. Definition and functions of warehouses. Types of warehouses and their classification. The logistic process in the warehouse and its elements. Features of management of production, sales, individual wholesale and other types of warehouses. Interaction of warehouse and transport facilities, problems of cargo units selection, containers and packaging. Characteristics of typical containers (pallet, container, etc.) The structure of warehouse costs and the determination of unit costs for warehouse operations, the method of distributing general warehouse costs by commodity groups. The general work data of the warehouse. Calculation of the warehouse area and its functional zones, selection and calculation of the need for warehouse equipment. Choosing the best possible storage system. Using ABC analysis to plan the goods placement in a warehouse. Technologies for placing goods on shelves and order processing. Organization of the goods selection in the warehouse. Modern trends in the warehousing and warehouse equipment development. Determination of the number of warehouses and placement of the warehouse network. The location of the warehouse determination techniques. Technologies of inventory records, the procedure for inventory in the warehouse and evaluation of its results.	LC, S
Subject 8. Distribution logistics	The content of distribution (sales) logistics, the principles of goods distribution. Distribution networks and logistics channels, participants of the logistics channel system. Functions and tasks of logistics intermediaries. Interaction of distribution logistics and marketing at various phases of the product life cycle. The place of logistics in the company's quality management strategy. The system of indicators of sales efficiency, evaluation and selection of the best possible level of logistics service for the products sale. Logistics features in various distribution concepts.	LC, S

6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Classroom equipment and technology support requirements

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 control and midterm assessment, equipped with personal computers (___ pcs.), a blackboard (screen) and multimedia presentation technical means.	21 workplace: Celeron system unit/2600 MHz/1280 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. RESOURCES RECOMMENDED FOR COURSE STUDY

a) Main Readings:

1. Gadzhinsky A.M. Logistika [Logistics]: Textbook. – M.: Dashkov and Co., 2025 – 420 p.
2. Gadzhinsky A.M. Praktikum po logistike [Logistics workshop]. – M.: Dashkov and Co., 2025 – 320 p.

b) Additional Readings:_

1. Logistika snabzheniya [Supply logistics]: textbook for bachelor 's and Master 's degree / V. I. Sergeyev, I. P. Elyashevich ; edited by I. Sergeyev. — 2nd ed., reprint. and add. — M.: Yurayt, 2025. — 524 p.
2. Sergeyev V.I. Upravlenie tsepyami postavok [Supply chain management]: Textbook. - M.: Yurayt, 2025. – 480 p.
3. Korporatvnaya logistika v voprosah i otvetah [Corporate logistics in questions and answers]/ edited by V.I. Sergeev. - M.: INFRA-M, 2024. – 642 p.
4. Afanasenko I.D., Borisova V.V. Ekonomicheskaya logistika [Economic logistics]. – St. Petersburg: Peter, 2012. – 432 p.
5. Volochienko V.A., Seryshev R.V. Logistika proizvodstva. Teoriya i praktika [Production logistics. Theory and practice]: Textbook. – M.: Yurayt, 2025. – 464 p.
6. Logistika i upravlenie tsepyami postavok [Logistics and Supply Chain Management]: Textbook. / Edited by V.V. Shcherbakova. – M.: Yurayt, 2025. – 592 p.
7. Logistika i upravlenie tsepyami postavok Teoriya i praktika. [Logistics and Supply Chain Management Theory and Practice]: Textbook. / Edited by B.A. Anikin, T.A. Rodkina. – M.: Prospect, 2025. – 224 p.
8. BiblioRossika An electronic library for students, professors and researchers. http://www.bibliorossica.com/individuals.html?ln=ru

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 *Fundamentals of Logistics and Supply Chain Management* discipline.
2. Laboratory workshop on the *Fundamentals of Logistics and Supply Chain Management* discipline (if laboratory work is available).
3. Methodological guidelines for drafting and formatting the course paper / project on the *Fundamentals of Logistics and Supply Chain Management* discipline (if there are ones).

8. ASSESSMENT TOOLKIT AND GRADING SYSTEM* FOR EVALUATION OF STUDENTS' COMPETENCES LEVEL UPON COURSE COMPLETION

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

DEVELOPERS:

Associate Professor of the Applied Economics Department		V.A. Ermakov
Position, educational department	Signature	Name, surname

HEAD OF EDUCATIONAL DEPARTMENT:

Deputy Head of the Applied Economics Department		A.A. Ostrovskaya
Name of the educational department	Signature	Name, surname

Program Manager

Deputy Head 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.

The toolkit for the midterm assessment of students in the discipline (module) *(developed and issued in accordance with the requirements of the " Regulations for the Formation of Assessment Toolkit (FOS"), approved by the Rector's order No. 420 dated 05.05.2016).*

The code of the controlled competence or its part	Controlled Discipline Section	Controlled Discipline Topic	Assessment Toolkit (forms of control of mastering the professional program)											Scores Topics	Section Scores
			Classroom Work					Autonomous Work							
			Survey	Test	Colloquium	Control Paper	Discussion	Essay	Homework	Report	Creative Project	Course Paper / project	Exam/Test		
GC-1, GC-2, PC-3	Раздел 1:The Concept and Essence of Logistics.	Тема 1: Conceptual foundations of logistics.	2												15
		Тема 2: Types of logistics flows.	2												
		Тема 3: Logistics systems characteristics.	2				9								
GC-1, GC-2, PC-3	Section 2: Functional areas of logistics	Тема 4: Procurement logistics.	2						5						35
		Тема 5: Production logistics.	2						5						
		Тема 6: Transport logistics.	2						5						
		Тема 7: Warehouse logistics.	2						5						
		Тема 8: Distribution logistics.	2						5						
GC-1, GC-2, PC-3		Creative Project									10				10
GC-1, GC-2, PC-3		Milestone Certification (Control Paper)				10									10

GC-1, GC-2, PC-3		Test		10											10
		Exam											20		20
		TOTAL	16	10		10	9		25		10		20		100