Syllabus
of the elective component

Functional logistics

Discipline	**Functional logistics**
Higher education level	**third (educational-scientific degree)**
Moodle course web-page	*https://dl2022.khadi-kh.com/course/view.php?id=2476*
Educational component volume	**4 credits (120 hours)**
Final control form	**test**
Consultations	**according to the schedule**
Department	**Transport Systems and Logistics Department**
Language of teaching	**English**
Course leader	**Ocheretenko Serhii, PhD, Associate Professor**
Contact phone	*(057) 707-37-83*
E-mail	**ocheret@ukr.net**

The educational component summary:
The purpose is formation of theoretical, practical and methodical provisions for determining the functional provisions of logistics for optimal material flow management.
The subject of the study is a pedagogically adapted concepts system about the regularities of the elements mutual influence of the material flows promotion systems and their interaction with the environment.
The main tasks of an academic discipline are:

- application of methods and techniques for identifying suppliers in logistics systems and organizing orders;
- the application of methods and techniques for managing material flows and their distribution, as well as the principles of planning the work of logistics system links;
- application of methods and techniques for determining intermediaries in logistics distribution channels;
- formation of logistics processes at the enterprise and solving complex and non-standard tasks, development of a model for the perspective development of logistics processes at transport enterprises;
- determination of the required size of the insurance stock and analysis of the structure of the flow of orders for products, taking into account the variability of demand and the formation of the company's total profit;
- determining the order size for single-item and multi-item stocks at enterprises in the presence of various restrictions, which will allow to increase the efficiency of the warehouse, determine the optimal delivery lots and manage the stocks of cargo owners of the transport distribution network, develop stock management strategies taking into account the basic principles of optimizing production stocks and be able to perform an assessment effectiveness of the developed options for enterprise inventory management.

Prerequisites for studying the educational component:
Fundamental and applied mathematical training. Innovative technologies for the transport systems development.

Competencies acquired by the applicants:
***General competences*:**

– the ability to use mathematical methods, computer and communication technologies in road transport research;

- possession of the skills necessary to conduct an experiment in scientific research using modeling and devices in practical and analytical work;

- the ability to plan, design and carry out scientific research from the stage of setting the task to the evaluation and consideration of the results and obtained data, which includes the ability to choose the necessary technology and methodology of research of transport systems;

- having skills in interpreting data obtained as a result of conducting experiments and simulations, and relating them to the relevant theory;

– ability to apply knowledge and understanding of basic facts, concepts, rules and theories related to the subject of research;

- mastery of the theoretical provisions and practical aspects of the specialists training in the specialty "Transport technologies (on road transport)", the ability to apply this knowledge to organize the solution of scientific research and applied tasks.

***Special (professional) competences*:**

- the ability to perform and present original research, to achieve scientific results that create new knowledge in the field of transport technologies and related interdisciplinary areas, the results of which can be published in leading scientific publications on transport technologies and related fields;

- the ability to identify, pose and solve problems of a research nature in the field of transport systems, to evaluate and ensure the effectiveness of the research being carried out;

– systematic scientific outlook and general cultural outlook;

- the ability to apply appropriate mathematical methods, models, computer technologies, as well as the principles of a system approach to solve complex problems in the field of transport systems and technologies.

Training results:

- develop and research conceptual, mathematical and computer models of processes and systems, effectively use them to obtain new knowledge and/or create innovative products in the field of transport and technology and related interdisciplinary areas;

- plan and perform experimental and/or theoretical research in the field of transport systems and technologies and related interdisciplinary areas using modern tools, critically analyze the results of own research and the results of other researchers in the context of the entire complex of modern knowledge regarding the problem under study;

- understand deeply the general principles and methods of technical sciences, as well as the methodology of scientific research, apply them in one's own research in the field of transport systems and technologies and in teaching practice;

- develop scientific and/or innovative engineering projects in the field of transport systems, substantiate their social, economic, and environmental efficiency, organize their implementation.

Thematic plan

Theme №	Theme (L, PW, SEW)	Hours	
		full-time training	part-time training
1	L. Strategy and functional cycle of logistics in the field of product promotion	2	2
	SEW. Theoretical foundations of logistics. The concept of the life cycle of products	12	12
2	L. The process of organizing purchases in logistics	2	2
	SEW. Objects of logistics management in supply	12	12
3	L. Rationale for supplier selection.	2	2
	SEW. Production specialization and supply strategy	12	12
4	L. Selection of logistics intermediaries	2	2

Theme №	Theme (L, PW, SEW)	Hours	
		full-time training	part-time training
4	PW. Selection of logistics intermediaries using expert intermediaries	4	4
	SEW. Sales policy and logistics strategy	12	12
5	L. The essence and concept of production logistics	2	2
	SEW. Objects of logistics management in production. Production technology and strategy.	12	12
6	L. Methods for determining nomenclature groups	2	2
	PW. Use of ABC analysis in warehouse management	2	2
	SEW. Reasons for stockpiling.	12	12
7	L. Inventory management models	2	2
	PW. Determination of demand according to time series data	2	2
	SEW. Methods of calculation of the insurance stock Calculation of characteristics of the main stockpile management strategies.	12	12
8	L. Determining the number of warehouses and the location of the warehouse network	2	2
	SEW. Choosing a storage system. Logistics process in the warehouse. Principles of logistic organization of warehouse processes.	12	12
Sum	**L**	**16**	**16**
	PW	**8**	**8**
	SEW	**96**	**96**
Total		**120**	**120**

Teaching methods:

1) verbal:

1.1 traditional: lectures, explanations, talks, etc.;

1.2 interactive (non-traditional): problematic lectures, discussions, etc.;

2) visual: illustration method, demonstration method;

3) practical:

3.1 traditional: practical classes, seminars;

3.2 interactive (non-traditional): business and role-playing games, trainings, seminar discussions, «round table», brainstorm.

Evaluation system and requirements:

Ongoing achievements

1 The applicants' ongoing achievement in the performance of the both educational activities and self-education work while training is evaluated using a four-point scale with the further conversion into the 100-point scale. While evaluating all kinds of works provided by the educational program are taken into account.

1.1 Lectures are evaluated by determining the quality of specific tasks performance.

1.2 Practical classes are evaluated by the quality of performance of the tests or individual tasks, execution and design of the report on practical works.

2 The final evaluation of the discipline is determined as a sum of points on:

- passed standard tests, verbal questioning, attendance and communication activity level;
- in-class practical tasks execution and theoretical preparation.

Applicants' evaluation score scale according to the ongoing control is given in table1.

Final estimation

1 The final test score is got by the applicant at the last double-lesson according to the discipline ongoing assessment. The condition to pass the test is not less than 60 points score.

Table 1 – Points distribution under the themes defining a final test score according to the discipline ongoing assessment

Ongoing assessment								Discipline total score
Theme 1	Theme 2	Theme 3	Theme 4	Theme 5	Theme 6	Theme 7	Theme 8	100
12	12	12	16	12	12	12	12	

2 Higher education applicants who have an ongoing assessment score less than 60 points can increase it at the last class by taking a combination of written and oral tests that comprise both answering 2 professionally-oriented question and a problem solution with further commenting the work done or standard tests. The applicants who made the tasks previewed by the practical classes are allowed to pass the final test.
3 Extra-points are awarded to the applicants for participation in scientific events.
3.1 Extra-points are added to the achieved sum of points by the higher education applicant for the current educational activity.
3.2 The number of extra-points awarded for different types of individual tasks depends on their volume and importance:

– discipline prize-winning places on the at the international / all-ukrainian competition of scientific students' works – 20 points;

– discipline prize-winning places at all-Ukrainian olympiads – 20 points;

– participation in the international / all-Ukrainian competition of scientific students' works – 15 points

– participation in international / all-Ukrainian scientific conferences of students and young scientists – 12 points;

– participation in all-Ukrainian discipline competitions – 10 points

– participation in KhNAHU discipline competitions and scientific conferences – 5 points;

– implementation of individual scientific and research (educational and research) tasks of increased complexity – 5 points.

3.3 The number of extra points might not exceed 20 points.
4 The result of the study is evaluated on a two-point scale (passed/failed) according to table 2. The total score comprising the extra-points might not exceed 100 points.

Table 2 – Conversion of the score into national evaluation system

According to 100-point scale	**According to the national scale**
between 60 scores and 100 scores	Passed
Less than 60 scores	Failed

Course policy:

– the course involves working in the team, the environment in the audience is friendly, creative, open to constructive criticism;

–the discipline requires mandatory attendance of lectures and practical classes, as well as self-education work;

– self-education work involves studying certain discipline themes, which are submitted in accordance with the program for self-education work, or have been considered briefly;

– all the tasks provided by the program must be completed within the prescribed time-frame;

– if the higher education applicant is absent for valid reasons, he/she passes the completed tasks during the self-education work and consultations provided by the teacher;

– while studying the course, higher education applicants should follow the rules of academic integrity set out in such documents: «Rules of academic integrity of participants

of the KhNAHU Education process» (https://www.khadi.kharkov.ua/fileadmin/P_Standart/pologeniya/stvnz_67_01_dobroch_1.pdf), «Academic integrity. The text check of academic, scientific and qualification works for the plagiarism» (https://www.khadi.kharkov.ua/fileadmin/P_Standart/pologeniya/stvnz_85_1_01.pdf), «Moral and ethical code of participants of the KhNAHU educational process» (https://www.khadi.kharkov.ua/fileadmin/P_Standart/pologeniya/stvnz_67_01_MEK_1.pdf).

– in case of detecting the plagiarism, the applicant receives 0 points for the task and must retake the tasks provided in the syllabus;

– cheating during control works and examinations is prohibited (including mobile devices). Mobile devices are only allowed to be used during online testing.

Recommended literature:

1. Тюріна Н.М., Гой І. В., Бабій І. В. Лоістика : навч. посіб. К.: Центр навчальної літератури, 2021. 392 с.
2. Теорія та практика / Кислий В. М., Біловодська О. А., Олефіренко О. М., Соляник О. М. К.: Центр навчальної літератури, 2019. 360 с.
3. Крикавський Є.В. Логістика. Львів: Львівська політехніка, 2014. 476 с.
4. Bowersox D., Closs D. Logistical Management: The Integrated Supply Chain Process. McGraw Hill Education, 2017. 752 p.
5. Окландер М.А. Логістика : навчальний посібник. К.: Центр навчальної літератури, 2018. 346 с.
6. Крикавський Є.В., Чорнописька Н.В. Логістичні системи : навч. посіб. Львів: Львівська політехніка, 2019. 288 с.
7. Bowersox Donald, David Closs, M. Bixby Cooper Supply Chain Logistics Management. McGraw-Hill Education, 2019 480 p.
8. Нефьодов М.А., Очеретенко С.В. Логістика. Х.: ХНАДУ, 2013. 164 с.
9. Очеретенко С.В., Кудріна В.Ю. Використання знижок в логістичних системах підприємствах. *Системи управління, навігації та зв'язку*. 2019. Вип. 3(55). С. 72–75.
10. Очеретенко С.В. До питання управління запасами автомобільних запчастин на торгових підприємствах. *Комунальне господарство міст*. 2018. Вип. 142. С. 114–118.
11. Очеретенко С.В. Управління складськими запасами та їх оптимізація на підприємствах по ремонту автомобілів. *Системи управління, навігації та зв'язку*. 2021. Вип. 2(64). С. 50–52.

Additional sources:

1. Дистанційний курс: https://dl.khadi.kharkov.ua/course/view.php?id=2476.
2. Асоціація «Український логістичний альянс» : офіційний веб-сайт. URL: http://ula-online.org/.
3. Council of Supply Chain Management Professionals : Official web-site. URL: http://cscmp.org/.
4. http://www.bvl.de/en.

Syllabus Developer _____ Serhii OCHERETENKO
signature

Head of Department _____ Petro HORBACHOV
signature