	SYLLABUS OF THE SUBJECT «COMPUTER-INTERGRATED SYSTEMS AND NETWORKS» **Educational Professional Program:** «Air Transportation Management» **Field of study:** 27 «Transport» **Speciality:** 275 «Air Transport Technologies» **Specialization:** 275.04 «Air Transport Technologies»
Higher Education Degree	First (Bachelor)
Subject status	Academic subject of selective subjects cycle
Course of study	2
Semester	4
Subject volume, ECTS credits / total amount of hours	4,0/120
Language	Ukrainian, English
To be studied (study subject)	Fundamentals of computer network structure. Tools for setting up, monitoring and diagnosing computer networks
Why is it interesting and must be learned? (purpose)	The world's largest network is the Internet, where data is exchanged between various computer-integrated systems. These include online vehicle monitoring systems (such as www.flightradar24.com), financial systems, industrial complexes and even refrigerators and coffee makers. Knowledge and understanding of the principles of its operation is extremely useful for any specialist, regardless of professional field.
What is studied? (learning results)	- Take responsibility, show public awareness, social activity and participation in the life of civil society, think analytically, critically understand the world; - Give answers, explain, understand explanations, discuss, report in the state language at a level sufficient for professional activity; - Apply, use modern information and communication technologies to solve practical problems in the organization of transportation and design of transport technologies; - Investigate transport processes, experiment, analyze and evaluate the parameters of transport systems and technologies; - Formulate, modify, develop new ideas for improving transport technologies; - Develop, design, manage projects in the field of transport systems and technologies; - Develop, plan, implement methods of organizing safe activities in the field of transport systems and technologies - Be able to apply modern computer-integrated technologies and have the skills to develop algorithms and programs using high-level languages; - Evaluate the parameters of traffic flows. Design schemes and networks of transport systems. Develop technologies for operational management of traffic flows
How is it possible to use the gained knowledge and skills? (competencies)	- Skills in the use of information and communication technologies; - Ability to work independently and in a team; - Knowledge and understanding of the subject area and understanding of professional activity; - Ability to organize and manage loading and unloading operations and warehousing operations on transport; - Ability to evaluate and ensure ergonomic efficiency of transport technologies;

	- Ability to assess and ensure the safety of transport activities - Ability to develop and use appropriate software for automation of transport systems and processes; - Ability to develop and use mathematical and computer models of transport systems and processes for scientific and practical research; - Ability to select and evaluate the effectiveness of modern methods and applications needed to solve fundamental engineering problems in the field of transportation and transport logistics
Academic logistics	**Course content: Module № 1 "Fundamentals of network technologies"** Topic 1. Introduction to computer networks. Topic 2. Network OSI model. Topic 3. DOD network model. Topic 4. Addressing in computer networks. Topic 5. Data transmission in computer networks. Topic 6. Network services and services. Topic 7. Diagnostics of computer networks. Topic 8. Data protection in computer networks. Types of classes: lectures, laboratory classes Teaching methods: explanatory-illustrative method; method of problem statement; reproductive method; research method Forms of study: full-time, part-time
Prerequisites	The discipline is based on knowledge of such disciplines as: "Higher Mathematics", "Computer Engineering", "Stochastic Processes in Transport Systems".
Post-requisites	The discipline is the basis for the study of such disciplines as: "Research of transport operations", "Automated systems for designing elements of transport systems".
Information support from the fund and repository of NAU library	**Educational and scientific literature:** 1. Таненбаум, Э. Компьютерные сети / Э. Таненбаум. - Изд. Питер, 2019. - 960 с.. 2. Комп'ютерні мережі. Том 2 / Є.В. Буров , М.М. Митник.- Львів: «Магнолія 2006», 2021.-400 с. 3. Комп'ютерні мережі. Книга 1 [навчальний посібник] / А.Г. Микитишин, М.М. Митник, П.Д. Стухляк, В.В. Пасічник – Львів, «Магнолія 2006», 2021. – 256 с.
Location and logistics	Classroom of theoretical training, laptop, mobile device (phone, tablet) with Internet connection for: communication and surveys; homework; performing tasks of independent work; passing the test (current, boundary, final control)
Semester control, examination techniques	Graded Test, Testing
Department	Air Transportation Management Department
Faculty	Faculty of Transport, Management and Logistics
Lecturer(s) **Originality of the subject**	**MEDVEDEVA NATALIA** **Position:** Associate Professor **Scientific Degree:** PhD in Engineering **Academic Status:** доцент **Teacher profile:** https://scholar.google.com.ua/citations?hl=uk&user=-ZkdjjkAAAAJ **Tel.:** 044 406-70-94 **E-mail:** nataliia.medvedeva@npp.nau.edu.ua **Location:** 2.113a
Link to the subject	Author's course, teaching in English
Higher Education Degree	https://er.nau.edu.ua/handle/NAU/34200