



SYLLABUS OF THE SUBJECT «DATA BASES ORGANIZATION»

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 mandatory component
Course of study	2
Semester	3
Subject volume, ECTS credits / total amount of hours	4,5/135
Language	Ukrainian, English
To be studied (study subject)	Basics of database organization. SQL language. Methods of optimizing the structure of databases.
Why is it interesting and must be learned? (purpose)	Databases are an integral part of modern information systems in transport, such as ticket booking, tracking routes, electronic document management systems, automation of production processes, etc. Studying the peculiarities of their functioning is an important competence of a modern specialist, regardless of the field of his professional activity.
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; - Find solutions for rational methods of organizing loading and unloading operations. Plan schedules for loading and unloading operations. To choose mechanisms and means of carrying out loading and unloading works; - Organize and manage the transportation of passengers and luggage in different connections. Choose the type, brand, type of vehicles (vessels) and routes. Organize passenger service at stations and passenger terminals; - Evaluate the parameters of traffic flows. Design schemes and networks of transport systems. Develop technologies for operational management of traffic flows; - Choose information systems for the organization of transportation. Operate automated control systems and navigation systems in the transportation process. Use electronic cards; - Develop conceptual, logical and physical models of the database. Be able to program databases using SQL; - Be able to apply modern computer-integrated technologies and have the skills to develop algorithms and programs using high-level languages

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 use modern information technologies, automated control systems and geographic information systems in the organization of the transportation process; - Ability to take into account the human factor in transport technologies
Academic logistics	Course content: Module № 1 "Fundamentals of database theory" Topic 1. Introduction to the organization of databases. Topic 2. Data modeling in computer systems. Topic 3. Relational data model. Topic 4. Structural language of SQL queries. Topic 5. Flat database structure. Topic 6. Relational database structure. Topic 7. Database triggers. Topic 8. Presentation and preservation of the procedure.m Module № 2 "Fundamentals of database design" Topic 1. Design of relational databases. Topic 2. Normalization of databases. Topic 3. Generalized methods of database design. Topic 4. CASE technology. Topic 5. Interaction of application applications with databases. Topic 6. Optimization of application databases. Topic 7. Database administration. Topic 8. Design of distributed databases. Topic 9. Non-relational databases. Module №3 (educational component) "Course work" 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: "Information systems and technologies in transport"
Post-requisites	The discipline is the basis for the study of such disciplines as: "Statistical analysis of transport systems and processes", "Course work Organization of databases"
Information support from the fund and repository of NAU library	Educational and scientific literature: 1. Коннолли Томас, Бегг Каролин Базы данных. Проектирование, реализация и сопровождение. Теория и практика, Издательство Вильямс, 2017, 1440 с. 2. Організація баз даних: навч. посібник/О.Г.Трофименко, Ю.В.Прокоп, Н.І.Логінова, І.М.Копитчук. 2-ге вид. виправ. і доповн. –Одеса: Фенікс, 2019.– 246с. 3. ДСТУ ISO/IEC 2382-17:2005 Інформаційні технології. Словник термінів. Частина 17. Базы даних. 4. Берко А.Ю.,Верес О.М., Пасічник В.В. Системи баз даних та знань. Книга 1. Організація баз даних та знань: навч. посіб. Львів : "Магнолія-2006", 2012, 456 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; testing (current, boundary, final control)
Semester control, examination techniques	Examination, Course Project, Testing

Department	Air Transportation Management Department	
Faculty	Faculty of Transport, Management and Logistics	
Lecturer(s)		GALAGUZ TETIANA Position: Associate Professor Scientific Degree: PhD in Engineering Academic Status: Associate Professor Teacher profile: https://scholar.google.com.ua/citations?hl=ru&user=Xr38B-EAAAAJ Tel.: 044 406-70-94 E-mail: tetiana.galaguz@npp.nau.edu.ua Location: 2.113a
Originality of the subject	Author's course, teaching in English	
Link to the subject	https://er.nau.edu.ua/handle/NAU/34200	