



Subject card

Subject name and code	Databases, PG_00060653						
Field of study	Transport and Logistics						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2024/2025		
Education level	first-cycle studies		Subject group		Obligatory subject group in the field of study		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Division of Applied Computer Science -> Institute of Naval Architecture -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Tacjana Niksa-Rynkiewicz				
	Teachers		dr inż. Paulina Strąkowska				
			dr inż. Tacjana Niksa-Rynkiewicz				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	30.0	0.0	45
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	45		4.0		51.0	100
Subject objectives	The aim of the course is to familiarize students with the possibilities of using programs and the procedures available in them during laboratory classes that enable:designing knowledge systems,creating relational databases,creating simple sql queries using queriescreating forms and reports enabling printouts.The software necessary to perform the tasks is Ms WORD, Ms Visio, Ms Access						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U03] is able to use computer methods to support the design, development and operation of transport means and systems		the student is able to use draw.io and Ms project to design knowledge systems, the student is able to use Ms Access to create relational databases, the student is able to create simple sql queries using queries, forms and printable reports.		[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools		
	[K6_W06] has established knowledge of engineering methods and design tools enabling the implementation of projects in the field of construction and operation of transport means and systems		The student has knowledge of how to design a relational database The student is able to select objects and indicate relations and their types The student is able to select the data type for attributes		[SW3] Assessment of knowledge contained in written work and projects		
	[K6_K01] is aware of the need for continuous improvement in the field of the profession and knows the possibilities of further education		the student is aware of the need to design knowledge systems, properly organize data and interpret them		[SK5] Assessment of ability to solve problems that arise in practice		

Subject contents	Program content (subject of classes): 1. Introduction to databases; discussion of literature and rigor of crediting. Basic concepts, the problem of redundancy, independence, integrity. 2. File database - application, examples 3. Relational database - relationship modeling 4. ER scheme (Chen method) 6. Data types in Access 7. Relational model summary: concepts, dependencies and normalization, pros and cons of normalization 8. Database design - documentation 9. ER scheme using the objective method 10. Ms Access - creating databases, tables, relationships 11. Ms Access - creating queries - queries 12. Ms Access - creating queries - queries 13. Ms Access - creating forms and reports 14. Presentation and discussion of exemplary implemented database projects 15. Presentation and discussion of exemplary implemented database projects		
Prerequisites and co-requisites	knowledge of the terminology of programming in English		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	project	60.0%	90.0%
	activity	50.0%	10.0%

Recommended reading	Basic literature	Banachowski Lech: <i>Bazy danych. Tworzenie aplikacji</i>. Akademicka Oficyna Wydawnicza PLJ, Warszawa, 1998. ISBN 83-7101-377-9. Ullman, J.D., J. Widom: <i>Podstawowy wykład z systemów baz danych</i>. WN-T, Warszawa, 1999 (tłum. z języka ang., wyd. 1997). ISBN 83-204-2394-5. Boratyn Dariusz: <i>MS ACCESS 2.0. System, oblicze, ku aplikacjom</i>. Wydawnictwo CROMA, Wrocław, 1995. ISBN 83-86343-30-3. Boratyn Dariusz: <i>Microsoft Office ACCESS 97. System, oblicze, ku aplikacjom</i>. Wydawnictwo CROMA, Wrocław, 199. ISBN 83-86343-27-2. Cassel, O. i C. Eddy: <i>ACCESS 97. Baza danych dla każdego</i>. Wydawnictwo HELION, Gliwice, 1999. ISBN 83-7197-067-6. Kopertowska M. i Ł. Jaroszewski: <i>Ćwiczenia z bazy danych ACCESS 97</i>. EDU-MIKOM, Warszawa, 1997. ISBN 83-87102-031-8. Kopertowska M. Europejskie Komputerowe Prawo Jazdy. Bazy Danych. (ECDL). ZNI MIKOM, Warszawa, 1999. ISBN 83-87102-62-8. Kuciński K.: <i>Poznajemy Accessa. Wszystko co chciałeś wiedzieć o MS ACCESS ale nie miałeś kogo zapytać</i>. Wyd. Edition 2000, Kraków 1999, ISBN 83-87297-50-X. <i>Microsoft Access 2.0 krok po kroku</i>. Oficyna Wydawnicza READ ME, Warszawa, 1994. ISBN 83-85769-86-2. <i>Microsoft Access 97 krok po kroku</i>. Wydawnictwo RM, Sp. Z o.o., Warszawa, 1997. ISBN 83-87216-09-7. Norton, P., V. Andersen: <i>Microsoft ACCESS 2000 PL. Programowanie według Petera Nortona..</i> ZNI MIKOM, Warszawa, 2000. ISBN 83-7279-058-2. Nowakowska M. i E. Zając: <i>Access. Programowanie aplikacji</i>. EDU-MIKOM, Warszawa, 1998. ISBN 83-87102-57-1. Palmer S.: <i>Access 2 dla opornych</i>. Oficyna Wydawnicza READ ME, Warszawa, 1995. ISBN 83-7147-017-7. Prague C.N., M.R. Irwin: <i>Access 97 Biblia</i>, RM, Warszawa, 1998. Simpson, A. i E. Olson: <i>Access 97</i>. Wydawnictwo HELION, 1988. ISBN 83-86718-99-4. Barker, R.: <i>CASE*Method modelowanie związków encji</i>. WNT, 1996. Jaskiewicz A.: <i>Inżynieria oprogramowania</i>. Wydawnictwo HELION, Gliwice, 1997. ISBN 83-7197-007-2. Yourdon, E.: <i>Współczesna analiza strukturalna</i>. WNT, Warszawa, 1996. ISBN 83-204-2067-9.
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Supplementary literature	Teoria baz danych Benyon-Davies, P.: <i>Systemy baz danych</i>. WNT, Warszawa, 1998. ISBN 83-204-2257-4. Cellary W. i Z. Królikowski: <i>Wprowadzenie do projektowania baz danych. dBase III</i>. WNT, Warszawa, 1988. ISBN 83-204-1089-4. Connolly, T. C. Begg: <i>Database Systems: A Practical Approach to Design, Implementation and Management</i>. Addison-Wesley Longman, 1998. ISBN 0201342871. Date, C.J.: <i>Wprowadzenie do baz danych</i>. WNT, Warszawa, 1981. Date, C.J.: <i>An Introduction to Database Systems</i>. Sixth Edition. Reading: Addison-Wesley Publishing Company, 1995 (planowane tłumaczenie w WNT). Delobel, C. i M. Adiba: <i>Relacyjne bazy danych</i>. WNT, Warszawa, 1989. ISBN 83-204-1025-8. Elmasri, R. and S. B. Navathe: <i>Fundamentals of Database Systems</i>. The Benjamin/Cummings Publishing Company, Inc. Redwood City California, 1994. ISBN 0-8053-1753-8. Figura Dariusz: <i>Obiektowe bazy danych</i>. Akademicka Oficyna Wydawnicza PLJ, Warszawa, 1996. ISBN 83-7101-336-1. Harris, W.: <i>Bazy danych nie tylko dla ludzi biznesu</i>. WNT, Warszawa, 1994. ISBN 83-204-1678-7. Hernandez, M.J.: <i>Bazy danych dla zwykłych śmiertelników</i>. EDU-MIKOM, Warszawa, 1998. ISBN 83-87102-52-0. Kim Won: <i>Wprowadzenie do obiektowych baz danych</i>. WNT, Warszawa, 1996. ISBN 83-204-2026-1. Muraszkiewicz, M. i H. Rybiński: <i>Bazy danych</i>. Akademicka Oficyna Wydawnicza PLJ, Warszawa, 1993. Pankowski Tadeusz: <i>Podstawy baz danych</i>. Wydawnictwo Naukowe PWN, Warszawa, 1992. ISBN 83-01-10570-4. Riordan R.M.: <i>Projektowanie systemów relacyjnych baz danych</i>. Microsoft Press/Wydawnictwo RM, Warszawa, 2000. ISBN 83-7243-103-5. Ullman, J.D.: <i>Systemy baz danych</i>. WNT, Warszawa, 1988. ISBN 83-204-0914-4. Ullman, J.D. and J. Widom: <i>A First Course in Databases</i>. Prentice Hall, 1997 (istnieje tłumaczenie w WNT). ORACLE Austin Dave: <i>Poznaj Oracle 8</i>. (Prosto profesjonalnie). ZNI MIKOM, Warszawa, 1999. ISBN 83-7158-153-X.
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		Rogers, U.: Oracle. Przewodnik projektanta baz danych. WNT, Warszawa, 1995. Wrembel, R. I W. Wieczerzycki: <i>Projektowanie aplikacji bazy danych Oracle</i>. Wydawnictwo NAKOM, Poznań, 1997. ISBN 83-86969-07-5. ISSN 0867-6011. SQL Celko J.: SQL Zaawansowane techniki programowania. Mikom, Warszawa, 1999. ISBN 83-7158-221-8. Date, C.J. and H. Darwen: <i>A Guide to SQL Standard</i>. Addison-Wesley, 1994. Gruber M.: <i>SQL znakomity podręcznik opisujący najnowszy standard SQL-a</i>. Wydawnictwo HELION, Gliwice, 1996. ISBN-83-86718-32-3. Harrington, J.L.: <i>SQL dla każdego</i>. EDU-MIKOM, Warszawa, 1998. ISBN 83-87102-55-5. <i>SQL Język relacyjnych baz danych</i>. WNT, Warszawa, 1995. ISBN 83-204-1806-2. Stephens, R.K. et al.: SQL w 3 tygodnie. LT&P, Warszawa, 1999. ISBN 83-87115-13-4.
	eResources addresses	Adresy na platformie eNauczanie: Bazy Danych - Wykład - Moodle ID: 11523 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=11523 Bazy danych - Moodle ID: 45200 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=45200
Example issues/ example questions/ tasks being completed	TASK: Please propose an entity relationship diagram to remember:planned and carried out cruises, club members and their stages, yachts together with their sailing possibilities (waters they can swim on) for the presented sailing clubThe sailing club creates a database to facilitate the completion of crews for planned cruises. The yacht-club owns yachts with various nautical (sailing) possibilities, which can sail on various waters. Also, club members - sailors - have different qualifications, allowing them to perform various functions on various cruises. These qualifications are strictly defined by each sailor's degree,confirmed by a patent with a unique number.	
Work placement	Not applicable	

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