Bialystok University of Technology									
Field of study	**Computer Science**							**Degree level and programme type**	**Engineer's degree full-time programme**
Specialization/ diploma path	**---**							**Study profile**	academic
Course name	**Database Security**							**Course code**	**FCS-00042**
								Course type	obligatory
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	**Semester**	3
	30				30			**No. of ECTS credits**	**6**

Entry requirements	
Course objectives	To familiarize students with the methods of protection of the information contained in the databases of the mechanisms built-in and custom solutions. Learning the steps of securing and choose the appropriate method of protection.
Course content	Lecture: Legal aspects of database security. Basic definitions and problems. User authentication methods. Confidentiality and security control in the Oracle environment. Creating roles, synonyms, perspectives. Possibilities of securing the user account. Security related to programming in PL / SQL. Transparent coding. Setting access rights at the level of a single table row. Information systems security policy. Specialist workshop: Installation of the Oracle 10g-12g server. Create a sample database. Creating user accounts and assigning permissions. Create and assign roles. Create synonyms and perspectives. Create profiles. Wrapping PL / SQL code. Transparent coding. Setting access rights at the level of a single table row.
Teaching methods	informative lecture, lecture problem, programming,
Assessment method	Lecture - written exam Laboratory - exercise reports

Symbol of learning outcome	**Learning outcomes**	**Reference to the learning outcomes for the field of study**
LO1	knows the basic issues related to database security	K_W07 K_W08
LO2	knows the basic problems, solutions and regulations relating to the protection of data against damage and unauthorized access	K_W14
LO3	able to analyze and test database for safety	K_U07
LO4	can protect the database program code and data from unauthorized access using appropriate tools and techniques.	K_U07
LO5	can develop basic documents related to database security	K_U13 K_U14

Symbol of learning outcome	**Methods of assessing the learning outcomes**	**Type of tuition during which the outcome is assessed**
LO1	Written exam	L
LO2	Written exam	L
LO3	Project	Sw
LO4	Project	Sw
LO5	Project	Sw

Student workload (in hours)		**No. of hours**
Calculation		
	1 - Attendance at lectures - 15x2	30
	2 - Attendance at laboratories - 15x2	30
	3 - Preparation for laboratories - 10x1	10
	4 - Homeworks, reports - 10x2	20
	5 - Participation in student-teacher sessions - 5x1	5
	6 - Projects -	25
	7 - Preparation for exams -	10
	8 - Preparation for tests -	20
	TOTAL:	**150**

Quantitative indicators	**HOURS**	**No. of ECTS credits**
Student workload – activities that require direct teacher participation	65 (1)+(2)+(5)	2.6
Student workload – practical activities	105 (6)+(2)+(4)+(3)+(8)	4.2

Basic references	https://docs.oracle.com/database/121/DBSEG/toc.htm M. Gertz, J. Sushil, Handbook of Database Security: Applications and Trends, 2008 Z. Sencun, G. Livraga, Data and Applications Security and Privacy XXXI: 31st Annual IFIP WG 11.3 Conference, DBSec 2017, Philadelphia, PA, USA, July 19-21, 2017, Proceedings 2017 I. Samarati, R. Indrakshi, From Database to Cyber Security, 2018
Supplementary references	https://www.dnsstuff.com/oracle-database-security
Organisational unit conducting the course	Department of Information Systems and Computer Networks — **Date of issuing the programme**
Author of the programme	dr inż. Eugenia Busłowska — Feb. 17, 2022

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW – field work,S – seminar