1.	Course Title	Databases
2.	Code	F18L3W004
3.	Study program	Software engineering and information systems
4.	Study Program Organizer	Faculty of Computer Science and Engineering
5.	Degree (first, second, third cycle)	first cycle
6.	Academic year / semester 3 / winter / optional	7. ECTS credits 6
8.	Teacher	full professor Goran Velinov, associate professor SoNja Gievska, associate professor Slobodan Kalajdzhiski, assistant professor Kire Trivodaliev, assistant professor Eftim Zdravevski, assistant professor Georgina Mircheva, assistant professor Vangel Ajanovski
9.	Course enrollment prerequisites	Алгоритми и податочни структури
10.	Course program goals (competencies): Introducing the student with the basic concepts for using the databases; the ways of their modeling and implementation; as well as the application of the query languages. The student will be able to model databases through semantic and relational modeling and database normalization, he/she will know how to practically apply the SQL standard for creating, maintaining and manipulating relational databases. The student will have knowledge of the basic concepts of concurrency control and transactions.	
11.	Course program content: (2) Physical organisation of data (data structures and indices) (1) Introduction to DBMS (2) Conceptual modelling and database design (E-ER diagrams) (1) The relational data model (2) Relational algebra and relational calculus (2) Introduction to SQL - DDL and DML statements (1) Advanced usage of SQL (1) Functional dependencies and database normalization (1) Introduction to transaction processing and concurrency control	
12.	Learning methods: Lectures using presentations, interactive lectures, exercises (using equipment and software packages), teamwork, case studies, invited guest lecturers, independent preparation and defense of a project assignment and seminar work.	
13.	Total available time	6 ECTS x 30 hours = 180 hours
14.	Distribution of the available time	30 + 60 + 10 + 10 + 70 = 180 hours

15.	Teaching activity forms	15.1.	Lectures – theoretical teaching	30 hours
		15.2.	Exercises (laboratory, auditory), seminar papers, teamwork	60 hours
16.	Other activity forms	16.1.	Project Tasks	10 hours
		16.2.	Independent Learning Tasks	10 hours
		16.3.	Home learning	70 hours

17.	Assessment methodology		
	17.1.	Tests	10 points
	17.2.	Seminar paper/project (presentation: written and oral)	10 points
	17.3.	Activity and learning	10 points
	17.4.	Final exam	70 points

18.	Assessment criteria (points/grade)	up to 50 points	5 (five) (F)
		51 to 60 points	6 (six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	Course completion and final exam requirements	Realized activities 15.1 and 15.2	
20.	Teaching Language	Macedonian and English	
21.	Teaching quality evaluation method	Internal evaluation mechanisms and questionnaires	
22.	Course Material		
	22.1.	Mandatory course material	

No.	Author	Title	Publisher	Year
1	Ramez Elmasri, Shamkant B. Navathe	Fundamentals of Database Systems	Pearson	2015
2	Héctor García-Molina, Jeffrey Ullman, and Jennifer Widom	Database Systems: The Complete Book	Pearson	2008
3	Christopher J. Date	An Introduction to Database Systems	Pearson	2003
4	Avi Silberschatz, Henry F. Korth, S. Sudarshan	Database System Concepts	McGraw-Hill	2010
5				0

22.2.	Additional course material			
No.	Author	Title	Publisher	Year