

COURSE DESCRIPTION FORM								
Course Code and Name	CENG377 NON RELATIONAL DATABASES (TECH. ELECT.)							
Course Semester	5							
Catalogue Data of the Course (Course Content)	This course begins with an introduction to the basic concepts of database systems and introduces students to the importance of databases in business and technology. Then, we move on to non-relational database technologies, which are the main focus of the course. Each week, we take a comprehensive look at different non-relational database systems such as MongoDB, Cassandra, Redis, and more.							
Course Textbooks	NoSQL Databases A Complete Guide - 2020 Edition, Gerardus Blokdyk							
Supplementary Textbooks	Seven NoSQL Databases in a Week, Aaron Ploetz, Packt Publishing, 2018							
Credit (ECTS)	6							
Prerequisites for the Course (Attendance Requirements)	There is no prerequisite or co-requisite for this course.							
Course Type	Selective							
Language of Instruction	English							
Course Objectives	The purpose of this course is to teach students the fundamentals of non-relational database technologies and to explain the applications of these systems in the business and technology world. Students will examine various systems such as MongoDB, Cassandra, Redis theoretically and practically. With this course, students will have the knowledge and skills to provide solutions to today's data management challenges.							
Course Learning Outcomes	<ol style="list-style-type: none"> 1. Learn the differences between relational and non-relational databases 2. Having knowledge about NoSQL databases 3. Having knowledge about Cache Technologies 							
Instruction Method (Face-to-face, Distance education etc.)	The mode of delivery of this course is face to face							
Weekly Schedule of the Course	Week 1: Introduction to NoSQL Databases Week 2: Relational Databases Week 3: Document Databases Week 4: Document Databases Week 5: Column-based Databases Week 6: Column-based Databases Week 7: Graph-Based Databases Week 8: Graph-Based Databases Week 9: Search engines and document providers Week 10: Search engines and document providers Week 11: Time series databases Week 12: Time series databases Week 13: Distributed message queues Week 14: Distributed message queues							
Teaching Activities (The time spent for the activities listed here will determine the amount of credit required)	Weekly theoretical course hours: 3 Reading activities Internet search and library work Designing and implementing materials Midterm and revision for midterm Final exam and revision for final exam							
Assessment Criteria	<table border="1"> <thead> <tr> <th></th> <th>Number(s)</th> <th>Weight (%)</th> </tr> </thead> <tbody> <tr> <td>Midterm exam</td> <td>1</td> <td>30</td> </tr> </tbody> </table>			Number(s)	Weight (%)	Midterm exam	1	30
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Midterm exam	1	30						

Assignment		
Application	5	30
Project		
Practice		
Quiz		
Final exam	1	40
Total	7	100

Activity	Number of Weeks	Duration (Weekly Hour)	End of Semester Total Workload
Weekly theoretical course hours	14	3	42
Weekly practical course hours			
Reading activities	14	2	28
Internet search and library work	14	2	28
Designing and implementing materials	5	7	35
Making a report			
Preparing and making presentations			
Midterm and revision for midterm	1	10	10
Final exam and revision for final exam	1	10	10
Total workload			153
Total workload/ 25			6,12
Course Credit (ECTS)			6

No	Program Outcomes	1	2	3	4	5
1	Knowledge of mathematics, science, basic engineering, computing, and computer engineering; ability to use this knowledge in solving complex engineering problems.		X			
2	Ability to define, formulate and analyze complex engineering problems using basic science, mathematics and engineering knowledge and considering the UN Sustainable Development Goals relevant to the problems addressed.				X	
3	Ability to design creative solutions to complex engineering problems; ability to design complex systems, processes, devices, software, algorithms or products to meet current and future requirements, considering realistic constraints and conditions.			X		
4	Ability to select, use and develop appropriate techniques, resources and modern engineering and informatics tools, including estimation and modeling, for the analysis and solution of complex engineering problems while being aware of their limitations.			X		
5	Ability to use research methods to examine complex engineering problems or research topics in computer engineering, including reviewing the literature, designing experiments, conducting experiments, collecting data, analyzing and interpreting results.		X			

	6	Knowledge of the effects of engineering practices and the standards used in these practices on society, health and safety, economy, sustainability and environment within the scope of the UN Sustainable Development Goals; awareness of the consequences of engineering solutions in the fields of information security and law.				X	
	7	Acting in accordance with engineering professional principles and knowledge on ethical responsibility; awareness of acting impartially, without discrimination on any issue, and being inclusive of diversity.		X			
	8	Ability to work effectively individually and as a team member or leader in intradisciplinary and multidisciplinary teams (face-to-face, remote, or hybrid).				X	
	9	Ability to conduct effective verbal and written communication on technical issues in Turkish or English, prepare reports, make effective presentations and prepare software documentation, considering the various differences of the target audience (such as education, language, profession).				X	
	10	Knowledge of business practices such as project, risk and change management and economic feasibility analysis; awareness of entrepreneurship and innovation.			X		
	11	Lifelong learning skill that includes the ability to learn independently and continuously, to adapt to new and developing scientific practices and technologies, and to think inquisitively about technological changes.				X	
Lecturer(s) and Contact Information	Lecturer's First/Last Name: Asst.Prof. Dr. Hüseyin Temuçin E-mail address: huseyintemucin@gazi.edu.tr						