

Course Description Form			
Course Code and Name	BDA5107 Big Data Privacy and Security		
Course Semester	Fall/Spring		
Catalog Content	1. Application Areas, Challenges and Risks of Big Data 2. Evaluation of Big Data Applications in the Context of Data Privacy Rules		
Textbook	1. Big Data: Storage, Sharing, and Security, Fei Hu, 2016 2. Data Privacy and Security,. Salomon, David, 2013 3. Information Security, Principles and Practice, Mark Stamp, 2011		
Supplementary Textbooks	Security, Privacy, and Forensics Issues in Big Data, Ramesh C. Joshi, Brij B. Gupta, 2019..		
Credit	8		
Prerequisites of the Course ( Attendance Requirements)	There is no prerequisite or co-requisite for this course. 80% attendance is required.		
Type of the Course	Elective		
Instruction Language	English		
Course Objectives	It aims to increase the knowledge about the security and privacy of big data and to teach both theoretical and practical solutions to the problems that may be encountered in these issues.		
Course Learning Outcomes	At the end of this course, the student will be able to learn the techniques and methods used to ensure data privacy, and will be able to comprehend the necessary procedures to protect the data.		
Instruction Methods	This course is carried out only in the form of face to face training.		
Weekly Schedule	1. Anonymization Algorithms 2. Control Models 3. Cryptography 4. Data analysis, methods and mining 5. Infrastructure Security 6. Access Control Mechanisms 7. Vulnerability and Intrusion Detection 8. Security in cloud computing 9. Cognitive Analytical 10. Internet of Things 11. Kinetic Information 12. Parallel Computing 13. Research and application projects 14. Research and application projects		
<b>Teaching and Learning Methods</b>  <i>(These are examples. Please fill which activities you use in the course)</i>	Weekly theoretical course hours: 3 Weekly applied course hours: 0 Reading Activities: 2 Internet browsing, library work: 1 Designing and implementing materials: 0 Report preparing: 3 Preparing a Presentation: 8 Presentations: 2 Preparation of Midterm and Midterm Exam : 10 Final Exam and Preparation for Final Exam: 18		
Assessment Criteria		<b>Numbers</b>	<b>Total Weighting (%)</b>
	Midterm Exams	1	30

	Assignment		4	10				
	Application		0	0				
	Projects		1	60				
	Practice		0	0				
	Quiz		0	0				
	Percent of In-term Studies (%)			40				
	Percentage of Final Exam to Total Score (%)			60				
	Attendance		-	-				
Workload								
	Activity	Total Number of Weeks	Duration (weekly hour)	Total Period Work Load				
	Weekly Theoretical Course Hours	14	3	42				
	Weekly Tutorial Hours	0	0	0				
	Reading Tasks	13	3	39				
	Studies	13	1	13				
	Material Design and Implementation	0	0	0				
	Report Preparing	8	4	32				
	Preparing a Presentation	2	10	20				
	Presentations	2	2	4				
	Midterm Exam and Preparation for Midterm Exam	1	20	20				
	Final Exam and Preparation for Final Exam	1	30	30				
	Other ( should be emphasized)	0	0	0				
	Total Workload			200				
	Total Workload / 25			8.0				
	Course Credit (ECTS)			8.0				
Contribution Level Between Course Learning Outcomes and Program Outcomes								
	No	Program Outcomes		1	2	3	4	5
	1	Reaches the expansion of knowledge by conducting scientific research in the field of engineering and evaluation, interpretation and application of information.						X
	2	Has extensive and in depth knowledge including the latest techniques, methods applied and their limitations in engineering.						X
	3	Completes and applies knowledge by using scientific methods by using limited or missing data and integrates information from different disciplines.					X	

	4	Be aware of new and developing practices of the profession, examines and learns when needed.					X
	5	Defines and formulates problems related to the field, develops methods to solve them and applies innovative methods in solutions.				X	
	6	Develops new and / or original ideas and methods, designs complex systems or processes and develops innovative / alternative solutions in their designs.				X	
	7	Designs and applies theoretical, experimental and modeling based researches, examines and solves the complex problems encountered in this process.					X
	8	Works effectively in disciplinary and multidisciplinary teams, leads such teams and develops solution approaches in complex situations, works independently and takes responsibility.			X		
	9	Communicates oral and written using a foreign language at least at the level of European Language Portfolio C1.		X			
	10	Conveys the process and results of the studies in written and oral form in a systematic and clear manner in national and international environments within or outside the field.	X				X
	11	Knows the social, environmental, health, security, legal aspects of engineering applications; project management, and business life applications and be aware of the constraints of these engineering applications.					
	12	Considers social, scientific and ethical values in the stages of data collection, interpretation and		X			

	announcement and in all professional activities.					
<b>The Course's Lecturer(s) and Contact Information</b>	Computer Engineering Department Chair bmbb@gazi.edu.tr					