

Course Description Form	
Course Code and Name	BDA5108 Current Approaches in Biometrics Science
Course Semester	Fall/Spring
Catalog Content	<ol style="list-style-type: none"> 1. Evaluation of identification and verification mechanisms 2. Assessment of Physical, Behavioral and Psychological Characteristics with Big Data Approaches
Textbook	<ol style="list-style-type: none"> 1. Biometric Security and Privacy Opportunities & Challenges in The Big Data Era (2017). Richard Jiang Somaya Al-maadeed Ahmed Bouridane Prof. Danny Crookes Azeddine Beghdadi 2. Acca, J. R. (2007). Biometric Technologies and Verification Systems. Butterworth-Heinemann. 3. Ashbourn, J. (2000). Biometrics: Advanced Identity Verification. Springer
Supplementary Textbooks	Privacy and Data Protection Issues of Biometric Applications: A Comparative Legal Analysis, Els J. Kindt, 2013
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	The aim of the course is to teach the theoretical issues and biometric data of biometric systems with application examples in big data platforms.
Course Learning Outcomes	<p>At the end of this course, students;</p> <ol style="list-style-type: none"> 1. Learn how to use biometric data with big data technologies. 2. Know how to secure big data infrastructures with biometric systems.
Instruction Methods	This course is carried out only in the form of face to face training.
Weekly Schedule	<ol style="list-style-type: none"> 1. Biometric Measurements 2. Biometric Systems and Properties 3. Knowledge Based Identification 4. Biometric Feature Based Identification 5. Types of Biometric Systems 6. Types of Biometric Systems 7. Psychological and Behavioral Investigations in Big Data Approaches 8. Comparison of Biometric Systems with Other Methods 9. Comparison of Biometric Systems with Other Methods 10. Biometric System Security 11. Social Identity 12. Big Data Computing Strategies in Biometrics 13. Big data analysis for smarter control mechanisms 14. Cyberpsychology 15. Cyber Cognition
Teaching and Learning Methods <i>(These are examples. Please fill which activities you use in the course)</i>	<p>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</p>

Assessment Criteria		Numbers	Total Weighting (%)				
	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				X	

	methods by using limited or missing data and integrates information from different disciplines.					
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
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.	X				

	12	Considers social, scientific and ethical values in the stages of data collection, interpretation and announcement and in all professional activities.		X				
The Course's Lecturer(s) and Contact Information	Computer Engineering Department Chair bmbb@gazi.edu.tr							