Course Description Form	
Course Code and Name	5311329 Big Data Analytics
Course Semester	Fall-Spring
Catalog Content	Big data manipulation, storage, analysis and analysis
Textbook	Hadoop: The Definitive Guide, Tom White, 3rd. Ed., O'Reilly Media, 2012 MapReduce Design Patterns: Building Effective Algorithms and Analytics for Hadoop and Other Systems, Donald Miner, Adam Shook, O'Reilly Media, November 2012
Supplementary Textbooks	-
Credit	8
Prerequisites of the Course (Attendance Requirements)	There are no prerequisite or co-requisite for this course.
Type of the Course	Technical Elective
Instruction Language	Turkish
Course Objectives	The aim of this course is to introduce technologies that can be used for big data manipulation, storage, analysis and analysis as a whole and to make applications with examples.
Course Learning Outcomes	Students who pass this course can: 1. Define and manipulate advanced concepts of Computer Engineering 2. Formulate and solve advanced engineering problems 3. Follow, interpret and analyze scientific researches in the field of engineering and use the knowledge in his/her field of study 4. Find out new methods to improve his/her knowledge. 5. Write progress reports clearly on the basis of published documents, thesis, etc
Instruction Methods	The mode of delivery of this course is face to face
Weekly Schedule	1. Week: Data cleanup and standardization. 2. Week: MapReduce framework. 3. Week: An introduction to Hadoop. 4. Week: Batch processing. 5. Week: HBase a low latency NoSQL. 6. Week: Near real time analytics and search with Impala and Flume. 7. Week: Stream computing. 8. Week: Predictive analytics. 9. Week: Visualizing large data sets. 10. Week: Case studies - big data in IT. 11. Week: Case studies - big data in social and health sciences. 12. Week: Final projects and class presentations. 13. Week: Final projects and class presentations. 14. Week: Final projects and class presentations
Teaching and Learning Methods *(These are examples. Please fill which activities you use in the course)*	Weekly Theoretical Course Hours: 3 Reading Tasks: 2 Studies: 1 Report Preparing : 3 Preparing a Presentation: 8 Presentations: 2 Midterm Exam and Preperation for Midterm Exam: 10 Final Exam and Preperation for Final Exam: 18

Assessment Criteria		Numbers	Total Weighting (%)
	Midterm Exams	1	30
	Assignment	7	30
	Application		
	Projects		

	Practice			
	Quiz			
	Percent of In-term Studies (%)		60	
	Percentage of Final Exam to Total Score (%)		40	
	Attendance			

	Activity	Total Number of Weeks	Duration (weekly hour)	Total Period Work Load
Workload	Weekly Theoretical Course Hours	14	3	42
	Weekly Tutorial Hours			
	Reading Tasks	14	3	42
	Studies	14	1	14
	Material Design and Implementation			
	Report Preparing	8	5	40
	Preparing a Presentation	2	8	16
	Presentations	2	2	4
	Midterm Exam and Preperation for Midterm Exam	1	14	14
	Final Exam and Preperation for Final Exam	1	28	28
	Other (should be emphasized)			
	Total Workload			200
	Total Workload / 25			8
	Course Credit (ECTS)			8

	No	Program Outcomes	1	2	3	4	5
Contribution Level Between Course Learning Outcomes and Program Outcomes	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 B2.		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 Informations	Name Surname: Prof.Dr. Şeref SAĞIROĞLU E-mail address: ss@gazi.edu.tr