Course Description Form

Course Code and Name	5131329(1) Wireless Sensor Networks
Course Semester	Fall - Spring
Catalog Content	This course covers fundamentals of wireless network technologies, applications, wireless sensor network protocols, performance analysis and fundamentals of distributed sensor networks.
Textbook	Sensor Network Operations, S. Phoha, T.F. La Porta, and C. Griffin (eds), pp. 422-441, ISBN: 0471719765, Wiley-IEEE Press, May 2006.
Supplementary Textbooks	1. Security in Distributed, Grid, Mobile and Pervasive Computing", Edited by Prof. Yang Xiao, Auerbach Publications, CRC Press 2007. 2. Wireless Sensor Networks: An Information Processing Approach by Feng Zhao and Leonidas Guibas, Morgan Kaufmann Publishing (July 6, 2004), ISBN-10: 1558609148
Credit	8
Prerequisites of the Course (Attendance Requirements)	There is no prerequisite or co-requisite for this course
Type of the Course	Elective
Instruction Language	Turkish
Course Objectives	To teach the fundamentals and concepts of wireless sensor networks, to introduce the application areas, to develop the protocols considering the requirements of wireless sensor networks and how to perform the performance analyzes of these protocols.
Course Learning Outcomes	1. Provides basic information about sensor networks. 2. Understanding of wireless sensor network protocols. 3. Gaining the ability to read technical research articles with a critical perspective.
Instruction Methods	The mode of delivery of this course is Face to face.
Weekly Schedule	1.Week Introduction to wireless sensor networks 2.Week Introduction to wireless sensor networks 3.Week Application samples 4.Week Sensor and network architecture 5.Week Deployment and organization 6.Week Transport layer protocols 7.Week Routing and data dissemination protocols 8.Week Localization and tracking protocols 9.Week Medium access protocols 10.Week Data storage protocols 11.Week Data aggregation protocols 12.Week Security protocols 13.Week Secure data aggregation protocols 14.Week Research and application projects
Teaching and Learning Methods	Weekly theoretical course hours:3 Reading Activities:2 Internet browsing, library work:1 Preparing report:5 Preparing presentation:5 Preparation of Midterm and Midterm Exam:15 Final Exam and Preparation for Final Exam:20Final Exam and Preparation for Final Exam

Assessment Criteria		Numbers	Total Weighting (%)
	Midterm Exams	1	20
	Assignment	5	20
	Application		
	Projects	1	20
	Practice		
	Quiz		

	Percent of In-term Studies (%)	1	60					
	Percentage of Final Exam to Total Score (%)	1	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	15	2	30
	Studies	13	3	39
	Material Design and Implementation			
	Report Preparing	5	7	35
	Preparing a Presentation	1	5	5
	Presentations	1	1	1
	Midterm Exam and Preparation for Midterm Exam	1	20	20
	Final Exam and Preparation for Final Exam	1	20	20
	Other (should be emphasized)			
	Total Workload			192
	Total Workload / 25			7.68
	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	

			1	2	3	4	5
	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		Computer Engineering Department Chair E-mail: bmbb@gazi.edu.tr					