

Course Description Form			
Course Code and Name	5061329 Digital Speech Processing		
Course Semester	Fall-Spring		
Catalog Content	Basics of digital signal processing, fundamentals and applications of speech processing		
Textbook	L. R. Rabiner and R. W. Schafer, Theory and Applications of Digital Speech Processing, Prentice-Hall		
Supplementary Textbooks	-		
Credit	8		
Prerequisites of the Course (Attendance Requirements)	-		
Type of the Course	Elective		
Instruction Language	Turkish		
Course Objectives	Teaching basics of digital signal processing, fundamentals and applications of speech processing.		
Course Learning Outcomes	<ol style="list-style-type: none"> 1. The students can generate both theoretical and practical solutions to problems that may be encountered in digital signal processing. 2. The students can develop speech recognition and processing applications. 		
Instruction Methods	The mode of delivery of this course is Face to face		
Weekly Schedule	<ol style="list-style-type: none"> 1. Week: Introduction to Digital Speech Processing 2. Week: Review of DSP Fundamentals 3. Week: Acoustic Theory of Speech Production 4. Week: Speech Perception—Auditory Models 5. Week: Sound Propagation in the Vocal Tract 6. Week: Time Domain Methods 7. Week: Frequency Domain Methods 8. Week: Homomorphic Speech Processing 9. Week: Linear Predictive Coding (LPC) 10. Week: Linear Predictive Coding (LPC) 11. Week: Speech Waveform Coding 12. Week: Speech Waveform Coding 13. Week: Term Project Presentations I 14. Week: Term Project Presentations II 		
Teaching and Learning Methods <i>(These are examples. Please fill which activities you use in the course)</i>	Weekly theoretical course hours Internet browsing, library work Report Preparing Preparing a Presentation Presentations Preparation of Midterm and Midterm Exam Final Exam and Preparation for Final Exam		
Assessment Criteria		Numbers	Total Weighting (%)
	Midterm Exams	1	30
	Assignment	1	30
	Application		
	Projects		
	Practice		
	Quiz		
	Percent of In-term Studies (%)		60
	Percentage of Final Exam to Total Score (%)		40
	Attendance		

Workload	Activity	Total Number of Weeks	Duration (weekly hour)	Total Period Work Load
	Weekly Theoretical Course Hours	14	3	42
	Weekly Tutorial Hours			
	Reading Tasks			
	Studies	9	4	36
	Material Design and Implementation			
	Report Preparing	3	10	30
	Preparing a Presentation	2	10	20
	Presentations	2	10	20
	Midterm Exam and Preparation for Midterm Exam	1	20	20
	Final Exam and Preparation for Final Exam	1	30	30
	Other (should be emphasized)			
	Total Workload			198
	Total Workload / 25			7.92
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 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: Asst. Prof. Dr. Uraz YAVANOGLU E-mail address: urazyavanoglu@gmail.com					