

WAVELET TRANSFORM AND MULTI SCALE ANALYSIS

1	Course Title:	WAVELET TRANSFORM AND MULTI SCALE ANALYSIS
2	Course Code:	EEM4436
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	4
6	Semester:	8
7	ECTS Credits Allocated:	4.00
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. Ahmet Emir DİRİK
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	edirik@uludag.edu.tr
17	Website:	
18	Objective of the Course:	<p>The main objectives of the course are as follows:</p> <p>To provide advanced knowledge of Wavelets and Multiscale Analysis fundamentals.</p> <p>To develop advanced skills and competency in Wavelets and Multiscale Analysis discipline.</p> <p>To apply these skills to the full spectrum of complex Wavelets and Multiscale Analysis problems, through independent research and investigation.</p> <p>To develop the students' transferable skills including communication (oral, written and aural), time and project management.</p>
19	Contribution of the Course to Professional Development:	To be able to follow innovations and apply them in the field by using the competence of collecting information, researching and analyzing them.
20	Learning Outcomes:	
	1	Gain sufficient knowledge on Wavelets and Multiscale Analysis field; the ability to model and solve pattern recognition problems using theoretical and practical knowledge.
	2	Gain the ability to identify, model, and solve complex Wavelets and Multiscale Analysis problems; the ability to select and apply appropriate analysis and modeling methods for these problems.
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	4	Gain the ability to develop, select, and use modern techniques and tools necessary for Wavelets and Multiscale Analysis applications; the ability to use information technologies in an efficient way.
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21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Digital signal processing methods in general	
2	Wavelets	
3	Signal Spaces	
4	Signal Bases and Frames	
5	Wavelet transforms	
6	Continuous time wavelet transforms	
7	Continuous time wavelet series	
8	MIDTERM EXAM and Course Review	
9	Discrete time wavelet transforms and generalizations	
10	Stationary-time wavelet transforms	
11	Wavelet Packets	
12	Wavelet based system design	

Activites		Number	Duration (hour)	Total Work Load (hour)
23	Theoretical Textbooks, References and/or Other Materials:	14	Dalgacık Teorisi, Niyazi Ar, 2008. 3.00	42.00
Practicals/Labs		0	0.00	0.00
Self study and preperation		14	analysis, D. E. Newland and Prentice Hall , 2003 3.00	42.00
Homeworks		1	14.00	14.00
Projects		0	0.00	0.00
TERM LEARNING ACTIVITIES		NUMBE	WEIGHT	
Field Studies		0	0.00	0.00
Midterm Exam		1	15.00	15.00
Midterm exams		1	15.00	15.00
Others		0	0.00	0.00
Home work-project		0	0.00	0.00
Final Exams		1	7.00	7.00
Total Work Load				135.00
Total work load/ 30 hr		2	100.00	4.00
ECTS Credit of the Course				4.00

Contribution of Final Exam to Success Grade	60.00
Total	100.00
Measurement and Evaluation Techniques Used in the Course	Measurement and evaluation is carried out according to the principles of Bursa Uludag University Associate and Undergraduate Education Regulation.

24	ECTS / WORK LOAD TABLE
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ÖK2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	1 very low		2 low		3 Medium		4 High		5 Very High							