IMAGE PROCESSING AND APPLICATIONS

1	Course Title:	IMAGE PROCESSING AND APPLICATIONS	
2	Course Code:	BM5121	
3	Type of Course:	Optional	
4	Level of Course:	Second Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	6.00	
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:	Doç. 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:	The main objectives of the course are as follows: To provide essential knowledge of image processing fundamentals. To develop advanced practical skills and competency in image processing. To apply these skills to the full spectrum of image processing applications, through independent research and investigation.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Gain sufficient knowledge on image processing; the ability to model and solve computer vision application problems using theoretical and practical knowledge. ;
		2	Gain the ability to identify, model, and solve complex problems; the ability to select and apply appropriate analysis and modeling methods for these problems. ;
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21	Course Content:		

Course Content:

Week	Theoretical	Practice
1	Introduction	

2	Digital image fundamentals	
3	Intensity Transformations	
4	Histogram processing	
5	Spatial Filtering	
6	Smoothing Sharpening	
7	Filtering in the Frequency Domain	
8	Filter design in frequency domain	
9	Image Restoration and Reconstruction	
10	Inverse filtering	
11	Color image processing	
12	Image compression	
13	Morphological Image Processing	
14	Image Segmentation	

22	Textbooks, References and/or Other Materials:	Digital Image Processing, Rafael Gonzalez, 2nd edition Addison-Wesley
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	0	0.00
Quiz	0	0.00
Total	11	100.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00

24 ECTS / WORK LOAD TABLE

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	0	0.00	0.00
Homeworks	10	12.00	120.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	0	0.00	0.00
Others	0	0.00	0.00
Final Exams	1	18.00	18.00
Total Work Load			180.00
Total work load/ 30 hr			6.00
ECTS Credit of the Course			6.00

25 CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS

	PQ1	**PQ2**	**PQ3**	**PQ4**	**PQ5**	**PQ6**	**PQ7**	**PQ8**	**PQ9**	**PQ10**	**PQ11**	**PQ12**	**PQ13**	**PQ14**	**PQ15**	**PQ16**
ÖK1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	5	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**