



**K.S. SCHOOL OF ENGINEERING AND MANAGEMENT, BANGALORE - 560062**

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

NAME OF THE STAFF : Dr. Dushyanth N D  
 SUBJECT CODE/TITLE : 15EC72/ DIGITAL IMAGE PROCESSING  
 SEMESTER/YEAR : VIIIA / IV  
 ACADEMIC YEAR : 2019-2020

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date	Engaged Date
<b>MODULE 1</b>							
1	<b>Module-1 Digital Image Fundamentals:</b> What is Digital Image Processing?, Origins of Digital Image Processing.	L+D, L+I	BB	1	1	5-8-19	5/8/19
2	Examples of fields that use DIP.	L+ D	BB+LCD	1	2	5-8-19	5/8/19
3	Fundamental Steps in Digital Image Processing	L+ D	BB	1	3	6-8-19	6/8/19
4	Components of an Image Processing System.	L+D	BB	1	4	13-8-19	13/8/19
5	Elements of Visual Perception.	L+D	BB+LCD	1	5	16-8-19	16/8/19
6	Image Sensing and Acquisition	L+ D	BB+LCD	1	6	19-8-19	19/8/19
7	Image Sensing and Acquisition	L+D,PS	BB	1	7	19-8-19	19/8/19
8	Image Sampling and Quantization	L+ D	BB	1	8	20-8-19	20/8/19
9	Some Basic Relationships Between Pixels.	L+ D	BB+LCD	1	9	23-8-19	23/8/19
10	Linear and Nonlinear Operations.	L+ D	BB+LCD	1	10	26-8-19	26/8/19
<b>MODULE 2</b>							
11	<b>Module-2 Spatial Domain:</b> Some Basic Intensity Transformation Functions.	L+ D	BB+LCD	1	11	26-8-19	26/8/19
12	Histogram Processing.	L+D,PS	BB+LCD	1	12	27-8-19	30/8/19
13	Fundamentals of Spatial Filtering.	L+D	BB	1	13	30-8-19	6/8/19
14	Smoothing Spatial Filters.	L+D,PS	BB+LCD	1	14	6-9-19	16/9/19
15	Sharpening Spatial Filters Frequency Domain: Preliminary Concepts	L+ D	BB+LCD	1	15	9-9-19	16/9/19
16	Sharpening Spatial Filters Frequency Domain:	L+D, L+I	BB	1	16	9-9-19	17/9/19

	Preliminary Concepts						
17	The Discrete Fourier Transform (DFT) of Two Variables.	L+ D	BB	1	17	13-9-19	20/9/19
18	Properties of the 2-D DFT.	L+ D	BB+LCD	1	18	16-9-19	23/9/19
19	Filtering in the Frequency Domain,	L+D	BB	1	19	17-9-19	24/9/19
20	Image Smoothing Frequency Domain Filters.	L+D	BB	1	20	20-9-19	27/9/19
21	Selective Filtering	L+ D	BB+LCD	1	21	23-9-19	30/9/19
22	Image Sharpening Using Frequency Domain Filters	L+ D	BB	1	22	23-9-19	30/9/19
23	TUTORIAL/REMEDIAL CLASS	L+ D	BB	0	22	24-9-19	11/10/19
24	<b>Module-3 Restoration</b> Noise models,	L+D	BB	1	23		11/10/19
25	Restoration in the Presence of Noise Only using Spatial Filtering.	L+ D	BB	1	24	27-9-19	4/10/19
26	Restoration in the Presence of Noise Only using Spatial Filtering.	L+D	BB	1	25	30-9-19	04/10/19
27	Restoration in the Presence of Noise Only using Frequency Domain Filtering	L+D	BB	1	26	30-9-19	14/10/19
28	Restoration in the Presence of Noise Only using Frequency Domain Filtering	L+D	BB	1	27	1-10-19	14/10/19
29	Linear, Position Invariant Degradations	L+D	BB	1	28	4-10-19	17/10/19
30	Estimating the Degradation Function	L+ D	BB	1	29	11-10-19	17/10/19
31	Inverse Filtering, Minimum Mean Square Error (Wiener) Filtering	L+ D	BB+LCD	1	30	18-10-19	21/10/19
32	Constrained Least Squares Filtering	L+ D	BB	1	31	21-10-19	21/10/19
33	<b>Color Fundamentals, Color Models</b>	L+ D	BB+LCD	1	32	21-10-19	22/10/19
34	Pseudocolor Image Processing. Wavelets	L+D	BB	1	33	22-10-19	28/10/19
35	Pseudocolor Image Processing. Wavelets	L+D	BB	1	34	25-10-19	28/10/19
36	Background, Multiresolution Expansions.	L+D	BB+LCD	1	35	26-10-19	4/11/19
37	Morphological Image Processing: Preliminaries	L+ D	BB+LCD	1	36	26-10-19	4/11/19
38	Erosion and Dilation.	L+D	BB+LCD	1	37	28-10-19	5/11/19

39	Opening and Closing,	L+D	BB	1	38	28-10-19	8/11/19
40	The Hit-or-Miss Transforms,	L+D	BB	1	39	29-10-19	8/11/19
41	Some Basic Morphological Algorithms.	L+ D	BB+LCD	1	40	4-11-19	11/11/19
42	Some Basic Morphological Algorithms.	L+D, L+I	BB	1	41	4-11-19	11/11/19
43	<b>Module-5 Segmentation</b> Point, Line, and Edge Detection	L+D	BB+LCD	1	42	5-11-19	12/11/19
44	Point, Line, and Edge Detection	L+D	BB+LCD	1	43	8-11-19	12/11/19
45	Point, Line, and Edge Detection	L+ D	BB+LCD	1	44	11-11-19	18/11/19
46	Thresholding	L+D	BB+LCD	1	45	11-11-19	19/11/19
47	Region Based Segmentation	L+ D	BB+LCD	1	46	12-11-19	19/11/19
48	Segmentation Using Morphological Watersheds.	L+ D	BB+LCD	1	47	18-11-19	20/11/19
49	Segmentation Using Morphological Watersheds.	L+D, L+I	BB	1	48	18-11-19	20/11/19
50	Representation and Description: Representation,	L+ D	BB	1	49	19-11-19	30/11/19
51	Boundary descriptors.	L+ D	BB+LCD	1	50	29-11-19	30/11/19

Total Number of Lecture Hours = 50  
Total Number of Tutorial Hours = 01  
Total Number of Revision Hours = 00



Course In charge



Head of Dept



Principal

Principal/Director  
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