

UNIT 1	Digital image processing systems, Sampling and quantization, some basic relationships like neighbours, connectivity, Distance measure between pixels, Imaging Geometry.	6
UNIT 2	Image Enhancement (Spatial Domain): Gray level transforms, histogram equalization, histogram specification, basics of the spatial filtering, smoothing operators, image gradients, sharpening operators Fuzzy logic: basic definitions, fuzzy operations, fuzzy inference, application of fuzzy logic in image processing.	7
UNIT 3	Image Enhancement (Frequency domain): Two-Dimensional Fourier transform and its properties, basics of frequency domain filtering, smoothing and sharpening in frequency domain	7

UNIT 4	<p>Image Restoration: modelling of image degradations, noise models, noise removal algorithms for impulse and Gaussian noise, Adaptive filtering, estimation of degradation function, inverse filtering.</p> <p>Color Image Processing: Color models, conversion between different models, color transforms, color smoothing and sharpening.</p>	8
UNIT 5	<p>Morphological Image Processing: Dilation, Erosion, opening and closing, hit and miss transform, boundary extraction, region filling, thinning, thickening, skeletons, pruning, Gray scale image dilation and erosion.</p>	6
UNIT 6	<p>Discontinuity Detection: point, line and edge detection, Sobel, Canny, and LoG edge detectors, edge linking.</p> <p>Image Segmentation: Thresholding, optimal and global thresholding, multiple thresholding, region growing, region splitting and merging, dam construction watershed segmentation algorithm, spatial techniques, frequency domain techniques.</p>	8
	TOTAL	42