SUBJECT NO-CS40019, SUBJECT NAME- IMAGE PROCESSING

LTP- 3-0-0,CRD- 3

SYLLABUS :-

Digital Image Fundamentals: A simple image model, Sampling and Quantization, Imaging Geometry, Digital Geometry, Image Acquisition Systems, Different types of digital images.Bilevel Image Processing: Basic concepts of digital distances, distance transform, medial axis transform, component labeling, thinning, morpho-logical processing, extension to grey scale morphology.Binarization and Segmentation of Grey level images: Histogram of grey level images, Optimal thresholding using Bayesian classification, multilevel thresholding, Segmentation of grey level images, Water shade algorithm for segmenting grey level image.Detection of edges and lines in 2D images: First order and second order edge operators, multi-scale edge detection, Cannys edge detection algorithm, Hough transform for detecting lines and curves, edge linking.Images Enhancement: Point processing, Spatial Filtering, Frequency domain filtering, multi-spectral image enhancement, image restoration.Color Image Processing: Color Representation, Laws of color matching, chromaticity diagram, color enhancement, color image segmentation, color edge detection, color demosaicing.Image Registration and depth estimation: Registration Algorithms, Setreo Imaging, Computation of disparity map.Image compression: Lossy and lossless com-pression schemes, prediction based compression schemes, vector quantization, sub-band encoding schemes, JPEG compression standard, Fractal compression scheme, Wavelet compression scheme.References1.Gonzalez and Woods, Digital Image Processing, Prentice-Hall.