Paper Code: PS04EELC01	Total Credit: 4
Title Of Paper: Image Processing	

Unit	Description in detail	Weightage (%)
I	Gray scale and colour Images, image sampling and quantization. Two dimensional orthogonal transforms - DFT, FFT, WHT, Haar transform, KLT, DCT, filters in spatial and frequency domains, histogram-based processing, homomorphic filtering.	20%
II	Non parametric and mode! based approaches, LOG filters, localisation problem. Image Restoration - PSF, circulant and block - circulant matrices, deconvolution, restoration using inverse filtering, Wiener Filtering and maximum entropy-based methods.	20%
III	Binary morphology, dilation, erosion, opening and closing, duality relation, gray scale morphology, applications such as hit-and-miss transform, thinning and shape decomposition.	20%
IV	Parallel beam projection, Radon transform, and its inverse. Back-projection operator, Fourier-slice theorem, CBP and FBP methods. ART. Fan beam projection Image communication - JPEG, MPEGs and H 26x standards, packet video, error concealment.	20%

Basic Text & Reference Books:-

- ➢ Fundamentals of digital image processing: A. K Jain, Prentice Hall India.
- ➢ Computer and Robot Vision, Vol-1: R.M. Haralick, and L.G. S!iauiro, Addison Wesley, Reading.
- ➢ Machine Vision: R. Iain, R. Kastun and E.G. Schunck, McGraw- Hill International Edition.
- ➢ Digital image processing: W. K. Pratt, Prentice Hall.
- ➢ Digital image processing, Vols. 1 and 2: A Rosenfold and A. C. Kak, Prentice Hall.
- ➢ Digital image restoration: H. C. Andrew and B. R. Hunt, Prentice Hall.