



# STANLEY

**COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN**  
( Approved by AICTE , New Delhi | Affiliated to Osmania University ,Hyderabad )  
Address : Chapel Road, Abids ,Hyderabad

SE 575

## IMAGE PROCESSING

### UNIT-I

**Image Formation and Description :** Digital Image Representation - Elements of Visual Perception. Sampling & Quantization. Elements of Digital Image Processing Systems.

### UNIT-II

**Image Transforms :** Digital Image Transforms - Fourier Transform, Extension to 2D, DCT, Walsh, Hadamard Transforms.

### UNIT-III

**Image Enhancements and Segmentation :** Histogram Modification. Image Smoothing - Image Smoothing - Image Sharpening, Thresholding. Edge Detection. Segmentation. Point and Region Dependent Techniques.

### UNIT-IV

**Image Encoding :** Fidelity Criteria. Transform Compression. K.L. Fourier, DCT, Spatial Compression. Run length Coding. Huffman Coding, Contour Coding.

### UNIT-V

**Restoration :** Restoration Models, Inverse Filtering, Least Squares Filtering, Recursive Filtering.

### Suggested Reading :

1. Gonzalez R.D., Woods R.E. "Digital Image Processing", Addison Wesley, 1992.
2. Rosenfeld A, Kak AC, "Digital Picture Processing", Vol. I & II, Acad. Press, 2nd ed. 1982.
3. Milan Sonka, Vaclav Hlavac, Roger Boyle, "Image Processing and Analysis and Machine Vision", 2nd Edition, Thomson Learning, 1999.