W

Digital Image Processing

C$ 3060

1996-97

Prerequisite : CS2010

Instructor:	David Gregg	- Libero Ficocelli
Office:	C405	C424
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Course Content:

To introduce students to the fundamentals of image processing and to give them an opportunity to utilize these techniques on real images. The core topics will include image fundamentals, image transforms, image enhancement and restoration, segmentation and encoding. We will also venture to cover advanced topics in applied image processing such as: pattern recognition, scene analysis and morphing. Course topics ***may*** include (but not limited to) all or some the following:

Image representation and Image processing devices
Image Fundamentals:
    visual perception, sampling and quantization
    pixel relations and imaging geometry
Image Transforms:
    Fourier transforms, Hough Transforms
Image Enhancement:
    histogram-modification techniques, smoothing and sharpening, pseudo-color
Image Restoration:
    algebraic approach, inverse filtering
    geometric transformations
Image Compression:
    encoding process and criteria
    lossless compression and lossy compression;
Image Segmentation:
    thresholding, edge detection, boundary following,
    region growing, motion detection;
Image Description:
    chain codes, shape descriptors, morphology
Pattern recognition:
    decision rules, classifiers and clustering

Lab : The scheduled lab for this course is in J101

Text: **Digital Image Processing: Principles and Applications**
Gregory A. Baxes
John Wiley and Sons

Marking:

Lab Assignments		18%
Projects	25%	
Midterm	20%	
Quizzes	12%	
Final Exam	25%	

Special Notes :
The Student will be eligible for a passing grade for the term, only if they obtain 31 out of a possible 62 marks (on quizzes, midterm and final).