

Digital Image Processing Session wise Breakup

		Topics	Theory	Lab	Total No of hours
DAY 1	Image Acquisition and Sampling	Image Acquisition: Matlab interfacing	2Hrs	1Hrs	3Hrs
	Basic colour Images	Colour Models			
		Matlab Programming basics			
	Image Enhancement	Image Quality Measures			
		Point-wise operations			

	Enhancement	Histogram based methods	1Hr	2Hrs	3Hrs
		Spatial Filtering			
	DE-noising Algorithms	Determination of noise level	1Hr	2Hr	3Hrs
		Linear Filters ,Non Linear Filters			
DAY 2	Segmentation	Edge Detectors	1Hr	2Hr	3Hrs
		Boundary Based Methods			
		Regions Based Methods			
	Morphological Filters	Binary Morphology	1Hr	2Hrs	3Hrs
		Exercise: Hit or Miss Transform			
	Geometrical Transformations	Translation, Scaling & Shear applied to images	1Hr	2Hrs	3Hrs
Linear transformation of the coordinates					
	Image Transforms	1D Fourier Transform,2D Fourier Transform			

DAY 3	Image Transformations	The Convolution Theorem	1Hr	2hr	3Hrs
	Case Studies	Face recognition Based On PCA			
		Extraction of Face Parts			
	Introduction toOpen CV	Description of OpenCV	1Hr		1Hr
		OpenCV naming conventions			
		Compilation instructions			
		Example C Program			
		GUI commands			
	Basic OpenCV data structures	Image data structure	1Hr	1Hr	2Hrs
		Matrices and vectors			
Other data structures					
		Allocating and releasing images			

Day 4	Working with images	Display and Loading Image	2Hr	2Hrs	
		,Reading and writing images,Accessing image elements,			
		Image conversion			
	Working with matrices	Allocating and releasing matrices	1Hr	1Hr	2Hrs
		Accessing matrix elements			
		Matrix/vector operations			
	Working with video sequences	Capturing a frame from a video sequence	1Hr	1Hr	2Hrs
		Gettng/setting frame information			
		Saving a video file			
		histogram equalization			
Morphological Operation					

	Work outs	Scaling and Shearing	1Hr	2Hrs	3Hrs
		Detection of Coloured object			
DAY 5	The Python Language:	Lexical Conventions and Syntax	2Hrs	1Hrs	3Hrs
		Types and Objects			
		Operators and Expressions			
		Flow Control and Exceptions			
		Imperative/Procedural/Scripting			
		Functional Pogramming			
		Object Oriented Programming			

DAYS		Working with Python: Tools and Environment			
	The Python Library	String and Text Handling	1Hr	2 Hrs	3Hrs
		Linking with Open CV			