Jodhpur Institute of Engineering & Technology
SYLLABUS
Branch: CSE (AI and ML)

Syllabus - VI Semester
6AIML4-23: Digital Image Processing Lab

Credits: 1.5 **Max. Marks: 75 (IA:45, ETE: 30)**
0L+0T+3P **End Term Exam: 3 Hours**

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S.No.	Objectives
1	Write a program to read 'cameraman.tif' greyscale image, reduce the size to 50%and save the reduced size image with .jpg extension.
2	a). Write a program to read 'cameraman.tif' greyscale image, convert this image into Black and White (Binary) image. b). Write a program to read 'cameraman.tif' greyscale image, convert this image into negative image.
3	Write a program showing RGB colour channels of a coloured image in its own colour.
4	Write a program to show geometric transformations of an Image. E.g. (Rotated by 45 degrees, Resized to 50%, Translated by (50, 50), Sheared by factor 0.5, Affine Transformation.
5	Write a program for Contrast stretching of a low contrast image by Histogram Equalization.
6	Write a program to display of(1-D&2-D)FFT of an image
7	Write a program to compute Mean, Standard Deviation of the given Image.
8	Write a program to add noise in the given image and remove the noise by Mean and Median filtering.
9	Write a program to implement a sharpening filter to detect edges of an image. (Prewitt and Sobel)
10	Write a program that demonstrates various image restoration techniques aimed at improving the quality of degraded images.
11	Write a program to show effect of Image Intensity slicing technique in image enhancement.
12	Project based on algorithms studied in syllabus.

Suggested References/Books:

1. Rafael C Gonzalez, Richard E Woods, "Digital Image Processing", 4th Edition, Pearson, 2018.
2. Kenneth R. Castleman, Digital Image Processing Pearson, 2006."
3: Deep Learning with Python, Second Edition by François Chollet
4.Beginning with Deep Learning Using TensorFlow: A Beginners Guide to TensorFlow and Keras for Practicing Deep Learning Principles and Applications by Mohan Kumar Silaparasetty