1.	Title of the Course	Image Processing Laboratory
2.	Course Number	EE554P
3.	Status of the Course	Core
4.	Structure of Credits	0-0-3-2
5.	Offered To	PG
6.	New Course/Modification to	Modification to EE5193/5
7.	To be Offered by	Department of Electrical Engineering
8.	To take effect from	July 2022
9.	Prerequisite	Nil
10.	Whether approved by the Department	Yes
11.	**Course Objective:** To provide practical awareness on the implementation and application of image processing algorithms. The experiments starts from the basic familiarity of reading and analysis of images, followed by experimenting with certain pre-processing methods to suit them for further applications. Image representation through different feature extraction methods will be learnt and finally the students will be able to use these features for high-end application tasks such as recognition.	
12.	**Course Content:** Following are the set of experiments of this lab: 1. Image Processing Operations: Spatial Transformations, Bilinear Interpolation, Noise 2. Image Processing Operations: Fourier Transform, Histogram Analysis 3. Image Convolution, Filtering, Edge detection 4. Image Restoration, Inverse and Wiener Filtering 5. Hough Transform and Basic segmentation (Thresholding) 6. Feature Extraction: Key point detection, Object segmentation and Region properties, Histogram of Orientation Gradients 7. LBP, Eigen features 8. Template matching by correlation and Nearest Neighbour based recognition 9. Character Recognition using Neural Networks 10. Face Recognition using CNN 11. Image segmentation using CNN	
13.	Text book(s): 1. R. J. Schalkoff, *Digital Image Processing and Computer Vision,* Wiley, (1989).	
14.	Reference(s): 1. R. C. Gonzalez, R. E. Woods, and S. L. Eddins, *Digital Image Processing using MATLAB,* Gatesmark, (2009).	