

School of Computer Science Engineering and Technology

Course- BTech

Course Code- CSET340

Year- 2026

Date- 12-16-Jan-2026

Type- Specialization Elective

Course Name- Advanced
Computer Vision and Video
Analytics

Semester- EVEN

Batch- 2023-2027 (VI Sem)

Lab Assignment No. 1

Exp. No.	Name	CO-1	CO-2	CO-3
1.	To perform Basic Image Manipulations on different types of images and Videos	✓		

Objective: How can you implement the basic operations on images in Python using OpenCV library? Perform the provided task as follows.

Data Set: Download the Zip_Folder containing “Test_Images_lab 1” images with some colored, gray scaled and black and white images.

1. Read RGB image, extract RGB channels and plot it and show the shape and size. **1 Mark**
(Lena_Image.png)
2. Convert RGB to Grey Scale image and binary image. (Lena_image.png) **1 Mark**
3. Extract Desired ROI and Perform Arithmetic and Logical operations. **7 Mark**
3.1 Extract desired ROI. (lena_Image.png)
3.2 Perform Image Addition to enhance the brightness. (lena_Image.png)
3.3 Perform Image subtraction:
Motion Detection. (filled_living_room.jpg), (Empty_living_room.jpg)
Defect Detection. (fine_plywood.jpg), (defected_plywood.jpg)
3.4 Image Multiplication:
Masking (lena_Image.png)
Enhance the brightness and contrast. (lena_Image.png)
3.5 Analyze the difference between image subtraction and division. (lena_Image.png)
3.6 Logical operation XOR: check the similarity between two images. (Lena_Image.png)
3.7 Analyze the difference between subtraction and XOR. (Lena_Image.png)
4. Extract Frames or perform sampling of a video with different frame rates. **1 Mark**
(Sample_Video.MP4)

Note:- Suggested Platform: Python: Jupyter Notebook/Visual Studio Code/Google Colab.

Mode of Delivery: Face-to-face: Instructor-led discussion and live coding demonstration.
Hands-on Practice via Google Colab/VS code/Notebook.

Submission: On LMS within the prescribed time frame.

