**CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**DEVANG PATEL INSTITUTE OF ADVANCE TECHNOLOGY AND RESEARCH**

**DEPARTMENT OF COMPUTER & SCIENCE ENGINEERING**

**ACADEMIC YEAR: 2020-21**

**List of Experiments**

**Name of Teacher: Ms. Bhavika Patel, Ms. Chintal Raval, Mr. Hardik Jayswal**

**Date:**

Subject: DIGITAL IMAGE PROCESSING (PE-II) (CS371) (5th Sem)

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| **Exp. No** | **Name of Experiment** | | **No. of Lab Hours** |
| 1. | Introduction to MATLAB. | | 6 |
|  | 1.1 | Introduction to various component of MATLAB Tool like editor, command window, workspace. |  |
|  | 1.2 | To demonstrate working of Basic functions, Mathematical Operations, Variable declaration, Scalar Arithmetic operations in MATLAB. |  |
|  | 1.3 | To demonstrate working of Operators, Decision Making and Looping in MATLAB. |  |
|  | 1.4 | To demonstrate working of Arrays and Vectors in MATLAB. |  |
|  | 1.5 | To demonstrate working of User Defined Functions and MATLAB Scripts. |  |
|  | 1.6 | To demonstrate working of Basic Image Processing Functions. |  |
| 2. |  | Write a MATLAB Script to demonstrate working of Image Arithmetic. | 2 |
| 3. |  | Write a MATLAB Script to demonstrate working of Affine Transformation. | 2 |
| 4. |  | Write a MATLAB Scripts for the following Point Processing Operations | 6 |
|  | 4.1 | Image Negative |  |
|  | 4.2 | Image Thresholding |  |
|  | 4.3 | Image Brightness & Contrast Modification |  |
|  | 4.4 | Log Transformation |  |
|  | 4.5 | Power Law Transformation |  |
|  | 4.6 | Contrast Stretching |  |
|  | 4.7 | Intensity Slicing and Bit Plane Slicing |  |
| 5. |  | Write a MATLAB Script for Image Histogram Equalization | 2 |
| 6. |  | Write a MATLAB Script for Following Neighborhood Operations. | 4 |
|  | 6.1 | Linear Filtering |  |
|  | 6.2 | Non Linear Filtering |  |
| 7. |  | Write a MATLAB Script for Frequency Domain Filters. | 2 |
| 8. |  | Write a MATLAB Script for Fourier Transform | 2 |
| 9. |  | Write a MATLAB Script for Color Image Processing. | 2 |
| 10. |  | Write a MATLAB Script for Morphological Operations. | 2 |
| 11. |  | Write a MATLAB Script for Image Segmentation | 2 |
| 12. |  | Demonstration of Open CV | 2 |