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| **Course-1 Title: Computer Graphics and Image Processing** |  |
| **Course No.: CIT-422 Credit : 1.50 Contact Hours: 2** | **Total Marks: 100** |

**11.1 Rationale**

Computer Engineers should be competent in computer graphics and image processing. They must learn the fundamental concepts of computer graphics and image processing. They must know the various computer graphics algorithms to draw the graphical representation of various geometric primitives. They must know how to process an image, image enhancement, pattern recognition, etc.

**11.2 Objectives**

* To draw the graphical representation of objects, shapes of different objects.
* To transform objects and apply image processing in a given set of images.

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| **11.3 Learning Outcomes** | **11.4 Course Content** | **11.5 Teaching  Learning Strategy** | **11.6 Assessment Strategy** |
| * Apply & analyze DDA(Digital Differential Analyzer) algorithm using C/Java program | DDA(Digital Differential Analyzer) algorithm | * Demonstration * Exercise | * Assignment * Observation |
| * Apply & analyze Bresenham line drawing algorithm using C/Java program | Bresenham line drawing algorithm | * Demonstration * Exercise | * Assignment * Observation |
| * Apply & analyze Midpoint ellipse algorithm using C/Java program | Midpoint ellipse algorithm | * Demonstration * Exercise | * Assignment * Observation |
| * Apply and analyze Bresenham circle algorithm using C/Java program | Bresenham circle algorithm | * Demonstration * Exercise | * Assignment * Observation |
| * Apply and analyze Midpoint circle algorithm using C/Java program | Midpoint circle algorithm | * Demonstration * Exercise | * Assignment * Observation |
| * Apply and analyze Koch curve using C/Java program | Koch curve | * Demonstration * Exercise | * Assignment * Observation |
| * Apply and analyze Boundary-fill algorithm using C/Java program | Boundary-fill algorithm | * Demonstration * Exercise | * Assignment * Observation |
| * Apply and analyze Flood-fill algorithm using C/Java program | Flood-fill algorithm | * Demonstration * Exercise | * Assignment * Observation |
| * Apply and analyze Sutherland-Hodgman line-clipping algorithm using C/Java program | Sutherland-Hodgman line-clipping algorithm | * Demonstration * Exercise | * Assignment * Observation |
| * Apply and analyze cohen-sutherland polygon-clipping algorithm using C/Java program | Cohen-Sutherland polygon-clipping | * Demonstration * Exercise | * Assignment * Observation |