

## **EE6222                    MACHINE VISION**

Acad Unit:                3  
Pre-requisite:            Nil  
Effective:                Academic Year 2013-2014  
Last update:             August 2013

### **LEARNING OBJECTIVE**

This course aims to introduce to students the basic concepts of vision based automation systems in industrial and practical settings. Development of vision based automation system may involve image capture and analysis, three dimensional data processing and machine intelligence. Hence, this course covers these topics appropriately.

### **CONTENT**

Fundamentals of image processing & analysis. Feature Extraction Techniques. Pattern / Object Recognition and Interpretation. Three Dimensional Computer Vision. Three-Dimensional Recognition Techniques. Biometrics.

### **LEARNING OUTCOME**

1. Understand the basic concepts of image pre-processing & analysis, feature extraction and pattern classification.
2. Understand the basic concepts of three dimensional image analysis and recognition.
3. Apply the machine vision concepts to develop simple automation systems.

### **STUDENT ASSESSMENT**

Continuous Assessment	20%
Final Examination	80%

### **REFERENCES**

1. Haralick R. M. and Shapiro L. G., Computer and Robot Vision, Vol. II, Pearson Education, 2002.
2. Gonzalez R. C. and Woods R. E., Digital Image Processing, Addison Wesley, 2010.
3. Duda R. O., Hart P. E. and Stork D. G., Pattern Classification, John Wiley & Sons, 2001.