

EE6222 MACHINE VISION

Acad Unit: 3.0
Prerequisite: NIL
Effective: Acad Year 2003-04
Last update: 5 Feb 2003

OBJECTIVE

Computer vision and machine intelligence is fast developing as an important course towards the realization of many systems in application today. The basic knowledge of this growing area is therefore pertinent to aspiring engineers. The objective of this course is to equip students with a broad understanding of the various techniques in image processing and computer vision that can be coupled with the elements of machine intelligence. Topics such as feature extraction techniques, object recognition and interpretation, three-dimensional extraction techniques and recognition will be extensively studied.

DESIRED OUTCOME

On completion of the course, the students should be able to understand specific theories of algorithms on computer vision and machine intelligence. The students will also appreciate the practical problems and considerations associated with successful vision systems.

OTHER RELEVANT INFORMATION

Prior knowledge of linear algebra is desirable.

CONTENT

Fundamentals of Computer Vision. Feature Extraction Techniques. Object Recognition and Interpretation. Three Dimensional Computer Vision. Three-Dimensional Recognition Techniques.

ASSESSMENT SCHEME

Continuous Assessment	20%
Final Examination	80%

REFERENCES

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